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# THE MARYLAND FARMER:

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## CONDITION,

*As Illustrated by the Growth of Potatoes.*

BY J. B. LAWES, F. R. S., LL D.

All farmers make use of the term Condition, and each one has probably a clear conception of the sense in which he uses it himself.

"It takes some years to get land into good condition." "He has got his land into such condition it will grow anything." These are familiar expressions which I will take as my text and endeavor to explain to the best of my ability.

At Rothamsted we have land from which 19 consecutive wheat crops have been taken. Some portions had received no manure whatever during the whole period; other portions had received applications of soluble chemical salts; but in no case had there been any stock on the land, or any application of farm yard manure. I conclude that this land would be considered to be out of condition, and it was upon land thus treated that I began to grow potatoes six years ago. As in our other experiments at Rothamsted, part of the land received no manure; part received 14 tons of farm yard dung; and part, various artificial manures. I will first follow the action of the farm-yard manure.

During the first year the increase of potatoes due to this source only amounted to 8 cwt. per acre, as the unmanured crop gave 3 tons, 17 cwt.; and the crop which received 14 tons of dung only 4 tons 5 cwt. During the next five years the difference in the produce of the unmanured land and that which received dung, has been getting larger, until last season when the crop grown upon the dunged land exceeded the unmanured crop by six tons

per acre; the produce of one being 2 tons and of the other 8 tons per acre.

In a lecture which I gave at Haddington, upon the connection between "The Manures made upon the Farm and Artificial Manures," I pointed out how the general use of farm-yard manure for the potato crop was to be explained by the close connection between the composition of dung and that of potatoes; inasmuch as one ton of dung and one ton of potatoes contain almost the same amount of potash and phosphoric acid, while the amount of nitrogen in each did not differ materially. The following was the table given by way of illustration.

	Potash.	Phos. Acid or Phos. of lime.	Nitrogen.
	lbs.	lbs.	lbs.
1 ton of Dung	11	8	12
1 ton of Potatoes	12	8	8

It is evident that in the first year we applied as much of these ingredients as would have grown from 13 to 14 tons of potatoes, and yet the whole produce actually obtained was but little over 4 tons.

During the six years we applied 84 tons of dung, and carried off 31 tons of potatoes; assuming that the soil yielded nothing, this leaves to be accounted for, ingredients competent to produce about 50 tons.

The explanation is that these last had been used in producing *condition*, or, in other words, a stock of fertility to be drawn upon in future years. How much of these unrecovered 50 tons may be still available, and what length of time it would take to get the whole amount back in crops, are questions which I cannot now attempt to answer.

It is quite certain that the small effect of the dung, when first applied, was entirely due to the insoluble state of its manure ingredients; for when the potash, phosphates and nitrogen were applied as soluble salts, the very first crop yielded in one case over

8 tons, and in another, nearly 9 tons of potatoes to the acre.

The crop grown during the season of 1881, with alkaline salts, containing 150 lbs. of potash, super-phosphate and a large amount of salts of ammonia, or nitrate of soda, yielded, in one case, 10 tons, and in the other, 10 tons, 16 cwt. of potatoes to the acre. This crop, including the haulm, could not have taken up much less than 140 lbs. of potash, which leaves only 10 lbs. of the whole supply to be accounted for. We see quite clearly from these results, that the dung and the artificial manures furnish the same ingredients to the potatoes; but with this material difference, that the farm-yard manure acts slowly, while the artificial manures produce their result at once.

I should certainly have anticipated on such stiff land as mine—which no farmer would have considered adapted for the growth of potatoes—that the mechanical action of the dung would have produced a more beneficial result, but such does not appear to have been the case.

It is a very remarkable fact that although chemical salts have been *alone* used upon this land for 25 years, we yet have a crop, which even in the best potato districts would be considered a large one, grown entirely without the intervention of vegetable or animal matter.

It necessarily follows that the continuous growth of potatoes upon the same soil renders them especially liable to disease, and yet in 1881, only one per cent. of the crop grown by farm-yard manure, and of the two large crops grown by artificial manures, less than one per cent. in one case, and less than two per cent. in the other, proved to be diseased when taken up. This speaks well for the great disease resisting power of the Champion potato, which has been the variety grown during the last two years.

Up to the present time the artificial manures have grown 16 tons more potatoes than the dung; and out of the 84 tons of dung applied, we have not accounted for more than 31 tons in the crops removed. If all further applications of manure were stopped, this residue of dung or condition would be gradually converted into potatoes; and after a considerable number of years, the land would eventually return to its original state.

The chemical ingredients which form the value of manures can be purchased more cheaply in the form of dung than in that of artificial manures, but by using them in the latter form they are far more rapidly converted into produce. By the use of dung and slowly soluble manures, condition is accumulated in the soil in the form of unexhausted fertility; while, by the use of artificial manures it assumes the form of growth, there is more corn, more straw, larger crops of roots and consequently more dung. It was considerations of this kind which induced me some years ago to urge that valuations of unexhausted improvements should include the straw of growing crops and farm yard manure.

### Farm Work for April.

This is not only the farmer's busy month, but it is usually precarious in its weather moods and consequently must have the farm work done in accord with its ever changing, flirting ways. To-day may be cold and rainy, to-morrow a bright warm day, hence the farmer must be on the alert, and not, if the weather suits, put off an hour what is needed to be done, for the to-morrow may prove unfit for the work that should be done to-day. This month all the plans for the year should be arranged finally and every preparation made for the whole year's farming. It is presumed that fencing has all been done, ditches cleaned out and new ones dug where required, roads and gates in order and a good deal of plowing done. The cows that are "coming in," must be well cared for, and the same attention given to ewes about to lamb, and mares that are to foal. Great care is to be taken of the young animals as they are born, so that accidents during their helpless condition may be guarded against.

#### Stock of all Sorts.

Must be strictly attended to this month, when most of them are shedding their coats and are weaker and more easily debilitated than they were two months ago. Give your horses good feed, good beds, good hay, good currying and rubbing—a little salt and dry ashes, daily, with half a pint each of flaxseed once or twice a week. Give yearling colts and calves two or three times a week, one or two quarts to each, of wheat bran or mill-feed. Feed your milking cows liberally and once a day green rye and wheat, cut and placed in their mangers. Keep your sows which have farrowed, separate in small yards with dry pens attached. Give them slops



besides dry grain, and to the pigs, all the scum milk you can spare from the calves you are feeding by hand. To such calves give an eighth of a pound of common sugar, mixed in their milk, or slop made of meal and bran, say half pint of each in one-half gallon of hot water, four times a day—the last feed at 8 o'clock at night, and the first one at day dawn. This mixture will do if scum milk is not abundant. Keep them in the stable or on a small grass plot, with warm shelter attached. Let the drink they have, be only tepid or as warm as cows milk only. Learn them to lick or eat dry food and grass as soon as you can.

Ewes with lambs by their sides should be fed well with chopped oats and corn, mixed, and with roots, and allowed to run on a rye field, if you want your lambs prime for market.

#### **Oats.**

If you have as yet failed to sow your oats, do so at once. Prepare the ground well, fertilize it, and sow two bushels to the acre of good, heavy seed, and do not fail to try a bushel of some of the newer sorts, such as the Russian, &c.

#### **Clover Seed and other Grass Seed.**

If you have not already sown these, do so at once, and at this time of the year be sure and harrow lightly after sowing, then roll. This will not injure but help the growth of the small grain, among which the clover and other grass seeds are sown. Follow with a top dressing of a bushel of plaster and three bushels of salt, after the grass seeds have formed their leaves above ground.

#### **Corn.**

Do all you can to prepare as soon as possible your corn ground by deep plowing, or plowing three or four inches deep and sub-soiling each furrow. Then dress the land with well rotted stable manure, or 10 bushels of fine ground bone, per acre, or dissolved South Carolina rock, 400 lbs., per acre; harrow and cross harrow until the land is in fine tilth and the manure thoroughly intermixed. Plant choice seed and never let a weed be seen while the crop is growing.

#### **Potatoes.**

Plant the most of your late crop now. Use a plenty of manure, and see that the ground was thoroughly prepared and in good condition before planting. Read what Dr. Lawes says in this number of the *FARMER* about potatoes and profit by what he writes.

#### **Hauling out Manures.**

Haul out all the manure you can, putting the fine on the corn or tobacco land, and the coarse as a top-dressing for your pasture lands.

#### **Meadows and Pastures.**

If they have stood long or appear hide bound, scarify them with a heavy harrow, and sprinkle with grass seeds the naked places; then sow to each acre ten bushels of ashes, if to be had; 200 lbs. of super-phosphate; 2 bushels of salt and 1 of plaster, mixed well together before spreading.

#### **Barley.**

Heretofore but little barley has been seeded south of Pennsylvania, but the tendency now being to diversify crops, some are enquiring about barley with a view of trying it this season, hence we give suggestions about it now. The price for malting is such that it may be made, under favorable circumstances of soil and season, quite a profitable crop. The soil best adapted to barley is a rich, dry loam, inclining to sand rather than to clay. It is subject to fewer diseases than almost any other cereal, the main difficulty in harvesting being its tendency to break off at the head when fully ripe, and the trouble in threshing in getting rid of the beard.

#### **Roots, Sugar Beet, Mangels, Carrots, &c.**

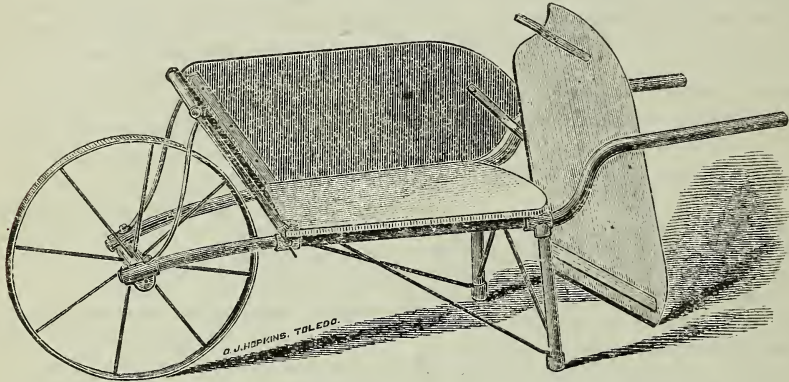
As there is, we are glad to see, a general change in the public toward rearing more stock of improved breeds, and making stock breeding or fattening, the important element in the profits of farming, there can be no mistake in recommending to all who rear stock of any description the propriety of growing a large quantity of succulent roots. For most stock, beets, mangels and turnips are the best, and carrots are capital food as a change and alternative for horses, colts and mares in foal. Therefore, we earnestly recommend that our farmers put in a few acres of roots, and to do so they have no time to lose. But as these roots require rich food, the land should be provided with a goodly quantity of well rotted stable manure and fertilizers besides.

*Soil.*—Choose, if it be possible, a rich, deep loam for mangolds, inclining to clay. Sugar beets require a lighter soil and not too rich, as in rich soil the saccharine properties of the beet are lessened. Still the land should not be very poor or the yield will be small. Wherever these roots require the aid of a fertilizer, the best for the purpose is 250 pounds of super-phosphate with the addition of from three to five bushels of salt. There is no root that is so much improved by a liberal application of salt as the beet.

*Preparation of the Land.*—Plow deep and harrow fine; next lay off the land in drills from 27 to 30 inches apart and one inch deep. Drop the seed thinly along the drills, cover lightly and roll all smooth.

*After Culture.*—Dust the young plants soon after they come up, and on moist mornings, with a mixture composed of equal parts of wood ashes and plaster. When the plants are about four inches high, then thin them out so as to stand 12 inches apart in the rows. Vacant spaces should at the same time be filled up with plants drawn from where they stand thickly. Ten days later, run the cultivator along the in-

The diameter of the wheel is 20 inches, and the felloes 2 inches wide with steel shafts and journals. The side boards of this barrow have loops attached, catching on to the handles to keep them from spreading when heavily loaded. Price only \$7.00, which is a little above the commonest wood barrow that is frail and not enduring.



tervals and hoe lightly the rows in which the plants stand. Keep the soil light and free of weeds throughout the growing season.

*Quantity of Seed to the Acre*—Three pounds of seed to the acre is the proper quantity. Before sowing the seed should be steeped for 48 hours in luke-warm water, to hasten germination, care being taken that the soil is not too dry at the time of planting.

The treatment of parsnips and carrots is the same as for sugar beets, except that neither require salt. The quantity of seed to the acre should be about two pounds. The drills may be made from 18 inches to 2 feet apart, and about half an inch deep.

*After Culture.*—Same as for beets.

*Time of Planting*—The earlier in April the better.

In the earlier stages of the growth of these vegetables, it will be found that the new implement, "Feast's Seattle Cultivator" will be of the greatest benefit, saving a great amount of labor and doing its work effectually. We give a particular description and cut of this newly-invented implement elsewhere.

#### Farm and Garden Implements.

Among the newer implements indispensable on the farm and garden, we give a cut of the new iron wheel barrow, weighs only 45 lbs. and made of iron entirely.

### Garden Work for April.

This is the gardener's busy month and we have several suggestions to offer, some of which we deem essential if a good garden is desired. As we have often said, we repeat, to have a profitable garden and an abundance of a variety of vegetable and small fruits requires but a small space for a family, if the locality and soil be suitable, the ground deeply plowed or spaded and highly enriched with manure and mineral fertilizers, and the soil made fine by chopping and raking; properly divided into beds, and some judgment exercised in selection of seeds and plants and rotation of crops, by which most of the space can be made to produce two or more crops per year.

*Corn.*—Plant some kind of early sweet corn every two weeks until last of May. Hyde's Improved, Stowell's Evergreen, Mammoth Sugar, Tuscarora, in the order named, are later producing than some of the earliest sorts, but they are all nice and large eared and productive. Use plaster and ashes freely with this crop.

*Peas.*—Continue to plant a few rows of peas every ten days until June. If you have not already sowed some early peas, sow at once a bed of Bliss American Wonder, rows eight inches apart, or the Little Gem, or Tom Thumb, each in rows 12 inches apart. Daniel O'Rourke and McLean's Advancer are both fine early medium



peas, require rows 2 feet apart and sticks or brush 2 feet high. For late, the Champion of England, a grand pea, requires rows 6 feet apart and sticks or trellis on each side 6 feet high. Plant deep in good soil. They can be planted at same time the last sowing of the earlier sorts, and then they will come in bearing just as the others are gone. The peas are large and rich; the vines bear well and remain in bearing a long time. Some of the Marrows are good late peas and very popular. The Kent pea is highly recommended for gardeners who want a productive early sort for market. Mr Capen, of Massachusetts says from 2 qts. of Kent peas; the fourth picking of the product sold for \$2 a box, and the gross proceeds of the crop was between \$24 and \$25. This is strong testimony for the Kent pea.

*Beets, Parsnips and Carrots and Salsify*—Sow beds of all these, using land which had been last year made rich, or use well rotted manure, ashes or phosphates. The soil should be deep, and put in the nicest order.

*Onions*—May yet be planted as setts, or seed may be sown. Those that are growing should be carefully weeded and the soil often stirred with rake or scuffle hoe.

*Salading*.—Sow at intervals for succession some seeds for salad, such as lettuce, pepper grass, etc. that the table may have a plenty of salad every day. They are wholesome at this time of the year especially. Water cress makes a nice salad, and a nice addition to young lettuce before it heads.

*Asparagus Rhubarb and Herb beds*.—See that all of these are in nice order, and dressed with well rotted manure, the asparagus bed may have a coat of salt.

*Dwarf or Snap Beans*.—Sow a few weekly for successive crops. The black wax we think much the most desirable sort.

*Lima Beans*.—As soon as the ground is warm enough and the weather settled, indicating time for general corn planting, from the 15th of April to the 10th of May, usually, plant Lima beans, and plant plentifully of this delightful and popular vegetable. Get good, large seed. Dreer's Lima is a good kind. First, have the ground well prepared, set poles, 8 or 10 feet long, 2 feet being in the ground, leaving 6 to 8 feet above ground. Set them firmly four feet apart in rows 6 feet apart, level the ground, then apply a dressing of rotted manure around each pole, 2 feet in diameter. By drawing with the hoe enough of the ground around to mix well with the manure, a light, soft bed or hill is found about two inches high. In this, around and three or four inches

from the pole, stick 6 beans, being careful to place the eye down, two inches deep, three or four are enough to let grow on a hill. The poles should have as many short stubs of branches left on them as possible to support the vines, and therefore cedar poles are best. Keep the whole ground well stirred and free from weeds.

Tomatoes do well planted one plant between each hill, if the poles are set 6 feet apart each way. Any surplus can be dried for winter use, and when soaked are as good and can hardly be told from fresh green beans. Thus they are of great value to a family the year round. The earliest beans should be carefully selected for seed. Every garden should have one or two quarts of Lima beans planted. They sell readily, green or dry, in market, at good prices. If green they are sent for sale in the pods. Some plant 2 beans in each hill of corn that is planted 6 feet apart each way, for the purpose of supporting the beans instead of poles. We have seen an acre or more grown in this way with good results, and at little trouble or cost of labor. If this is done, the corn should be planted early, two stalks left to grow, and when a foot high, then the beans planted, so as to let the corn get strong enough to bear the bean vines.

*Early Planted Potatoes*.—Should be often cultivated or hoed to keep the land light and clean.

*Cabbage*.—Those planted last fall must now have a thorough working and dusted with plaster. A broadcasting of salt and ashes, mixed, 1 bushel of salt to 3 of ashes, and sown at the rate of 300 lbs per acre, may be applied with good effect. Plants in the hot-bed or cold frame, if large enough, may now be set out and planted in rows, 2 feet apart, and 6 or 8 inches apart in the rows. As they grow they can be thinned and used as collards or fed to stock, so as to leave them 12 or 16 inches apart in the rows for heading. Sow a bed of Winningstadt for planting later, that you may have an unsurpassed autumn cabbage for cooking and for pickling. It makes elegant sour kraut for early winter use.

*Cucumbers*.—Those who wish early cucumbers can now plant a few hills and set over them a bottomless box, 8 by 10, and 6 inches deep, the top sloping at an angle of forty-five degrees, with a pane of glass as the top. On warm or mild, showery days the box can be removed, or if the sun be hot and the weather cool and windy, raise one side of the box an inch or two, and whitewash the glass. Give the plant all the air and moisture needed. Gradually harden the plants and remove the boxes as soon as the weather permits.

*Tomato Plants*—may be set out in the same way, if they have already got good roots and fair size.

*Tomato Plants*.—As soon as they are 2 inches high, ought to be pricked out and set in a cold frame covered with glass or cotton, in drills six inches apart, and 2 or 3 inches between the plants, well watered with tepid water. When 4 inches high, again transplanted into 8 inch pots, filled with rich earth and mould and set in a cold frame without cover except on cold nights or stormy days, and then covered with boards or matting. By being transplanted twice, the plants become stout in stem, with bunched roots, and are in blossom when set out in the middle of May, or a little later, not checked in growth by the change to open ground, and relieved from the confinement of the pots they will make rapid growth. Tomatoes do much better if grown by an open fence or on trellises, or have the support of strong brush on which to climb. They should be highly manured and planted four feet apart. Guano water or weak liquid manure is an excellent application to the growing plants applied every few days. This is for a few plants in a small garden, but every family should have a large patch of tomatoes cultivated in the usual way, for abundance at home for canning, and the surplus, if any, for sale, or for poultry and pigs. The tomato has, like ice, become a necessary luxury with Americans.

*Melons*.—Prepare the ground now for your melons to be planted the first day, or early part of next month. Throw up a list of three furrows with a big plow, each list 12 feet apart and then cross 12 feet apart with a single deep furrow. This forms checks 12 feet each way—in these checks put one half bushel of rotten stable manure, some use a rich compost of soda, manure, salt, ashes, mould, &c., let it stand so until you have time to make the hills, which should be done as soon as you can. Make the hills by mixing the manure with enough of the earth of the "list," to form a hill 3 feet in diameter and 3 or 4 inches above the level of the ground. This hill must be well chopped and the manure well distributed through it, until the soil is perfectly disintegrated. It is left then until the seed is planted when it is again worked over and the seed sown in a broad hollow in the middle of the hill; 12 or 15 seeds scattered and the hollow covered over so that the seed will be about 1 inch below ground, the earth over the seed is then patted with the hand. When the seed comes up the hills should be raked and hand wed, to keep the soil light and help the growth of the plants.

As they grow, thin gradually, leaving only three of the strongest plants to stand. If flies or bugs attack, sprinkle plaster, soot, dry ashes and a little flour of sulphur, one or all, over the plants and around them, each evening, until they get into the rough leaf, when they will be safe. The sprinkling of these remedies must be light. Try Pyrethrum dissolved in water, it is harmless to the plant, but death to most plant enemies. Canteloupes and mush-melons are treated in the same manner, only they are planted in hills six feet apart, and it is important to pinch off the ends of the leading vines as soon as they run 3 or 4 feet, to make them bear. As soon as the melon vines begin to run, the middle of the rows are plowed out deep, with well lapped furrows, and the narrow spaces between the hills that will escape the plow should be carefully wed up, so that all grass and weeds in the patch shall be destroyed. This is all the labor that is incurred by the great melon growers of Anne Arundel, as far as we can learn.

*Squashes*.—The bunch summer and running summer squash may be planted by the middle of this month, in rich hills four feet apart, if the weather is favorable.

*Shrubbery*.—Finish trimming and tying up all shrubbery requiring it. Set out all that is wanted this season.

*Strawberries*.—Make new beds. The Crescent is remarkably hardy, and very prolific if planted with the Sharpless, which is a remarkably noted fruit. Kentucky for late, Capt Jack, Wilson and other old sorts, are much esteemed. Try a few of the new sorts that yearly are sent out under a flourish of trumpets. The Crescent being a pistillate sort requires others like the Sharpless, to fertilize the blossoms.

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**SUICIDE.** A man over taxes his brain, his stomach, and his nerve, day after day, week after week, until at last, he is utterly broken down. Surely Suicide is not too severe a name for this. Dr. Clark Johnson's Indian Blood Syrup, being purely composed of indigenous herbs, it invigorates the liver, purifies the blood, tones the stomach, regulates the bowels and kidneys, quiets the nerves, and gently opens the the pores of the skin.

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**SOCIETY BELLES.**—On account of its remarkably delicate and lasting fragrance society belles are loud in their praises of Flor-eston Cologne.



For the Maryland Farmer:

### Farm Mills.

One of the utterly utter things to comprehend is, why there are not more farm mills in use in the United States, for to my mind, there is no more profitable investment than to purchase a good farm mill, and not only are they a source of profit, but a convenience that puts their worth far above their market value. I am not an agent for any mill, but after over 25 years constant use of one, I cannot conceive why such a prejudice exists in relation to them.

In 1836, one of the "old originals," the "Excelsior," was purchased, the price then being \$45. Within six months, 2,000 bushels of corn had been ground in that mill, and very satisfactorily besides, and at five cents per bushel for grinding the account stood like this—mill \$45, grinding credit, \$100, profit, \$55. Since that time the old mill has never had a winter's rest, the amount ground varying from 100 to 1000 bushels of corn, and if I remember aright the wear has only been two sets of "rings."

From my house to the custom, or public mill is exactly three miles, making six miles travel every time I go there. Now I have timed the "old mill," time and again, and have found I ground a bushel of corn every four minutes. Now if my horses should be driven the six miles in grinding my grist at home, I have ground 30 bushels of corn in the same time and distance it would have taken me to have gone to mill; and 30 bushels of corn would be an average load on our Ohio roads in the winter. But at the mill I should have probably had to wait for my grist, going to mill being usually an all day job, and then the argument would be all upon the side of the home or farm mill. If there was a great rush, it is a common thing to be obliged to leave my load and return the next day for it, in which case, the profit is all upon the side of the farm mill. The draft of the mill is far less than dragging a heavy load over rough or muddy roads. I have cheated the miller it is true, but he has no more reason to complain than I should have, because he keeps a few cows and makes his own butter instead of purchasing it of me.

Though young, I am an old fogey about corn and cob meal, believing that they

should be eaten together. The cob, even if it did not possess any nutriment, is worth twice over the cost of grinding for its mechanical effect in lightening up the heavy solid mass of pure corn meal, and not only prevent packing in the folds of the stomach, etc., but the potash of the cobs assists digestion, promotes the assimilation of the food, making it better in every way. I am firm in my belief that the cob so controls the meal that it is more largely brought back and re-masticated with the 'cud,' hence, the more perfect the functions of digestion are performed the greater the benefits of feeding home ground grain.

With steel grinding rings and other improvements, such as are now part of the farm mill, they must be far superior to my old mill with its iron grinders, but nevertheless, as it now is, I am satisfied that it turns many a penny of profit into my pocket, and therefore I not only give it due credit, but take this occasion to sound its praise abroad. J. G.

**CORNSTALKS AS FUEL.**—An Iowa farmer who has both coal and wood on his farm, warms his house with cornstalks, and claims that they make the best and cheapest fuel he can get. He uses a large stove, and burns the stalks in tightly bound bundles, weighing about forty pounds each. A bundle burns three hours (without flame) in air tight stove. The large stove offers so much radiating surface that it does not need to be very hot. Five bundles a day or 600 for the winter, suffices to keep the stove going and the room warm. The farmer, Mr. Ruggles, says: "I can bind up six hundred bundles of cornstalks in two days alone, while I couldn't chop the wood to warm this room in a week. Then in the spring I have a lot of strong ashes for my field, while my neighbors have to cut up the same cornstalks in the spring to get them away from the harrow. It makes me smile when I hear about those idiots up in Minnesota who have fifty-acre cornfields, and still go cold or buy coal. Why, I'd rather burn cornstalks than cut maple wood within sight of the house."

### ANNOYANCE AVOIDED.

Gray hairs are honorable but their premature appearance is annoying. Parker's Hair Balsam prevents the annoyance by promptly restoring the youthful color.

A Paper read by Mr. A. P. Sharp, before the Maryland Academy of Science, in Baltimore, Md., on the 6th of March, 1882,

### On the Artificial Application of Nitrogen.

Some years have passed since the writer introduced this subject before the Maryland Academy of Sciences, advancing at the time the theory that the application of quarternary compounds, *i. e.* animal matter in the form of blood, hearts, livers, old leather and such material as is usually introduced into fertilizers for the small per cent. of nitrogen they contain was entirely useless, and drew from the farmers millions of dollars that ought to be saved to them for a better purpose.

At the time so popular was the ammonia theory, that the idea advanced before the academy was looked upon as mere speculation, based upon no substantial foundation and it met the fate of many similar ideas which conflicted with the teachings of the would be learned chemists, who profess to know what is necessary to apply to a worn out soil to secure a remunerative crop, and restore the land to its maximum capacity for the production of food for man and beast.

The rebuff given this theory failed to quiet the writer and for the past fifteen years, the subject has been pushed both by actual experiments in the field, and through the press, and now I am glad to know that many more "Richmonds" are in the field, and the subject is being calmly and intelligently discussed by writers from all sections of the country.

The ammonia theory started some forty years ago, by the introduction of Peruvian guano, and as all will remember the prominent feature about it was the smell caused by the escaping ammonia, which existed in the form of carbonate and other combinations with organic acids. Although the ammonia only represented from ten to fifteen per cent. of the guano, the whole value was attributed to the ammonia, and from this point I presume, was the starting one in placing ammonia as a standard of value, from which the value of the others were calculated, upon the same principle that gold is the standard of the metallic kingdom. The fallacy of this standard

will be seen when the proper point is reached.

Starting upon the above basis it was only necessary to secure like results with guano that prompted the introduction into fertilizers every sort of quarternary compound, so as to secure the corresponding elements necessary to produce in their putrefaction the fifteen per cent of ammonia, without regard to the binary compounds, which alone, I claim as plant food.

The utter failure of such stuff, and I speak from the standpoint of actual and expensive experiments, induced the reduction of quarternary matter to the capacity of producing 8 per cent. of ammonia, and substituting binary compounds, such as bone, potash, sulphate of lime, and far better results were obtained. The rapid advance in price of nitrogenous matter induced a further reduction of the mixture of hearts, livers and blood, the highest organic matter, and when honestly made, a corresponding increase of the proper inorganic binary compounds, such as Navassa, S. C. rock, bone black, bone ash, German potash salts, and the compound gave still better results. Time moved along, the still advancing price of the compounds spoken of prompted another reduction, and one to two per cent. ammonia marked the *new era*; and still the plants found from that unknown source abundance of nitrogen without passing through some animal.

The time for another change is come and past, and now the cry is heard, *no ammonia*, and from all quarters the best results are being obtained from the plain phosphates, without a trace of any quarternary or organic matter capable of forming ammonia. In tracing back my own experiments, I recall the first purchase of fertilizer that was intended for my first crop; the mixture consisting mostly of flesh and blood, to secure the proper elements for the then usual per cent. of ammonia, was used at the rate of 300 lbs. to the acre, on the corn at planting time, and at that time being flushed with the popular idea that ammonia was the great agent to secure a large crop of corn, the growth was watched with much interest, more especially as being the virgin crop. The putrefaction of the animal matter, forming water, carbonic acid and ammonia, no doubt supplied a little nitrogen, and the corn started very well but long before harvest time, the utter fail-



ure of the crop was clear, and my outlay proved a clear loss. From that time to the present, not a dollar, (except for experiments) has been expended for flesh and blood or other quaternary compounds, and yet I have seen a farm that at the time spoken of, the poorest of the poor, gradually improved, the improvement of which dates from the free application of bone ash without a trace of matter capable of forming ammonia. The most successful of all my experiments was with good hard wood ashes, and surely no one would claim any ammonia in them, although they will for raw bone, of which I have used very little, although it does work so nicely on much of the land upon which it has been used. It is claimed that a little ammonia is necessary to give the plant a start. The fallacy of this will appear by the following experiment. A small spot of ground was selected, upon which a hot fire was kept up for some time, so as to make sure that all organic matter was destroyed near the surface and after raking off the unburnt coals; the ashes were mingled with the soil and wheat planted four inches apart in September. In one month to a day the blades were 12 inches long and continued to grow rapidly with numerous branches, each in time bearing a head of wheat, and from some of the branches eight hundred grains were obtained from the growth of one grain. Some gentlemen present will remember that several such specimens were exhibited before this Academy, and some of our friends were positive that it was simply impossible for such a growth from one grain, and there must have been a bunch of seed got together. The following season another spot was treated in the same way, and a certain number of seed planted in the presence of competent witnesses. The same result was obtained, and in due time armed with the positive evidence to sustain the first assertion, I attended a meeting of the Academy, intending to present the matter again but was prevented from doing so by our esteemed friend, Dr. Murdock, who frankly acknowledged that after a patient investigation of the subject, he had been mistaken and was now satisfied that not only eight hundred grains could be produced from one, but a much larger number. Just here, I desire to say that this wheat matured some days earlier than wheat which had been sown with an ammoniated fertilizer.

As this experiment is conclusive to my own mind that a grain of sound, good seed contains within itself all the elements including nitrogen necessary to develop the leaf and root, the chlorophyll in the former representing the quaternary compound, of which nitrogen is a necessary element, and is obtained from other sources than flesh and blood, the two latter are very good for buzzards, but unnecessary for young wheat. If it can be proved that wheat can do without it, and it is easy to do so, of what use can it be in the future growth and development of it, for a moment's reflection will satisfy one that it can be of no use after the first four days, for putrefaction will soon destroy all vestige of the usual organic matter used to supply the nitrogen, *i. e.*, blood, flesh, fish, hearts, lungs and livers of animals, and the small amount of nitrogen formed by such destruction, is at most, a mere taste. It would be like feeding a hungry man with a teaspoonful of soup. A crop of wheat will take from 30 to 50 lbs. of nitrogen per acre. The usual application of fertilizers, containing one to two per cent. ammonia, or rather material for forming ammonia, for as such, it does not exist until putrefaction takes place, when nitrogen unites with hydrogen and forms ammonia.

In from one to three hundred pounds per acre, and taking the latter figure as the maximum, but four to five pounds of nitrogen could be furnished the crop at most, and for this small bite millions of dollars are spent by the farmers annually. This is not the only objection to its use; to secure even this small quantity a large amount of organic matter is necessary, usually from thirty to forty per cent. of matter, all of which is useless except the ammonia, hence it will be seen that this takes the place of some binary compound, the true and only food of plants. As no mineral contains nitrogen, the question might well be asked from what point does the wheat obtain it? I mention wheat from the fact that it is the highest feeder in nitrogen, and in consequence has the highest organization and comes next to animal life.

Mr. J. B. Lawes, the eminent English experimenter claims nitric acid as the agent to supply it, and his numerous experiments prove that this binary compound will supply nitrogen, hence his extensive use of nitrate of soda. It is easy to prove that



sulphate of ammonia will supply nitrogen and the same can be said of all ammoniacal salts. But the question is, where no artificial application of nitrogen is applied how does it reach the roots, for if plants feed on binary compounds, elementary nitrogen will fail to do the business.

Numerous experiments carried on by thoroughly scientific men in different sections of Europe, have established the fact beyond dispute, that there is a constant formation of nitric acid and ammonia going on, on the surface of the earth and in the atmosphere, and during the growing season, between the middle of March and the first of July, at least thirty to thirty-five pounds of this binary compound of nitric acid and ammonia descends to the earth dissolved in the falling rain, to say nothing about that which is found in every drop of dew, and that formed by the evaporation of water, and as you are all well aware of the composition of air and water, it is an easy matter to guess where the elements of this salt can be found. Equally well known is the fact, how feebly a current of electricity will decompose water, and all chemical decomposition presents elements that are quick to reunite and form new compounds, hence the salt spoken of can be traced to its primary source as easily as a flowing spring can be to its mother ocean. A porous soil admits the free circulation of water, loaded with its companion, and quickly the roots find their food, which in turn meets the carbon that the leaves have stolen from its old companion oxygen, and organic life creeps out of the inorganic kingdom, which in due time paves the way for a higher organization, animal life, without starting from the standpoint of animal matter as is claimed by speculators in fertilizers, and this fallacious theory has cost the farmers of Maryland millions of dollars, with no reward for the investment, and in many cases I am sure bankruptcy can be traced to it, some of which I could mention. Only a few weeks ago a well known farmer of Queen Anne's told me he had invested nine hundred dollars in a blood guano, thinking to have a large wheat crop, but he had never seen one cent's worth of good. If he had bought it for his mosquitoes there might have been some sense in it, but to feed wheat on blood is very much like feeding a furnace with water. If you can decompose the water

and use the hydrogen, all right; and this brings me to the point to inquire how offensive decaying animal matter may deceive the farmer, and thereby help the speculator's theory. As I have said before, plants feed on binary compounds, and not ternary or quarternary. All compounds of the latter derived from animal life have but a feeble attraction, hence, in the presence of heat, water and air, the elements composing them, hydrogen, oxygen, carbon and nitrogen, quickly separate into their original condition, water, carbonic acid and ammonia, the two first of no use, but the ammonia forming near the shooting roots, presents a small amount of this active binary compound, so necessary to the growing plant in storing up nitrogen in the form of albumen, which in due time finds a temporary resting place in the animal kingdom. There is no serious objection to the use of this little ammonia in giving an abnormal growth to the plant, but as there is so little of it in organic matter, to secure this small amount it becomes necessary to introduce a large amount of quarternary matter, say 30 to 40 per cent. to obtain the 1 to 2 per cent. of ammonia in the fertilizer, and this is done at the expense of binary compounds, such as phosphoric acid, potash, magnesia, &c., which must be found in all soils, and being immovable in their nature, must be applied artificially, when the deficiency is proven by a barren or unproductive soil. The water, carbonic acid and ammonia being movable elements, nature supplies them as I have before stated, whenever the season is such as to secure them in the falling rains and condensing dews.

This brings me to the question, why has Peruvian guano acted so well in producing crops, the effect of which is obtained from the ammonia it contains.

A solution of the question is easily reached. The ammonia in guano is already formed, and is found as a binary compound in amount from 10 to 15 per cent., the balance of it is composed of the mineral matter from the dung of the bird, and in a condition for the rapid nourishment of the plant, the roots of which, by their peculiar power of extracting food from binary compounds, such as are found in the guano, grow rapidly, not from the ammonia alone, but from its equally important companions always present in the guano. By the introduction of organic

matter, such as old shoes, leather, blood, flesh, tankage, the latter composed largely of hearts, livers, lungs, entrails, and every other refuse of slaughter houses and offensive animal matter, the real and important binary compounds are excluded. To protect this matter from putrefaction and to break up the mineral phosphates requires a large percentage of sulphuric acid, which is not needed by the plant, hence is another foreign element, which, like the carbon, hydrogen and oxygen of the organic matter, excludes the important elements, *i. e.*, phosphoric acid, of which plants are large consumers, and to secure a large crop it must be present, and from the large amount removed by the crops the proper supply must be in reach of the plant, and in a condition to admit of the power of the plant to decompose and appropriate. All know that well rotted manure does the business when applied in proper quantities; the passage through the animal, *i. e.*, by the combustion of the organic matter in the shape of food and its reduction into its primary condition, a binary compound. A rapid combustion does the same thing, hence the crop of wheat spoken of before. A few words on the subject of placing nitrogen or ammonia as the standard of value in estimating the monied value of a fertilizer. I do not propose at this time to discuss this wonderful element. Enough to say it is one of the most negative elements we have, possessing but little attraction for any of the others, and when combined especially as animal matter has no sustaining power without the assistance of animal life. The human race being the largest consumers of nitrogenous compounds, and consequently more of it found in their composition than many other animals, decomposition is more rapid when life passes away.

A fertilizer, freshly prepared, passes through the chemists hands, and is valued by the nitrogen it is said to contain, that being the standard and of the highest value, placed at from 20 to 27 cents per pound, according to the material furnishing it. (Why, I do not know.) This may leave the factory with a certain value, for which the farmer has to pay, yet, before it reaches him, from some simple cause, heating or getting wet, or from its natural escape, much of the ammonia has passed to its old home, and the farmer is paying for what

the air has robbed him of.

As a standard of value, something fixed should be adopted, and it would be hard to find anything more so than the phosphate of lime, the true and important base of all good fertilizers. In some of the States the law demands a certain per cent. of nitrogen, and to secure it all the shoe factories in the North find a market for their old scraps of leather, and the cities furnish tons of old shoes for the same purpose, anything that will, upon analysis, determine the necessary nitrogen, when the world above and below the earth is full of it, and every falling drop of rain that permeates the soil carries with it ammonia in the most available form.

Mr. J. B. Lawes, the well known manufacturer of fertilizers, and experimenter of England, in a recent article in reply to the writer, in the *Country Gentleman* and copied in the February number of the *American Farmer*, of this city, states that the natural supply of nitrogen in the form of nitric acid, that falls during the growing season, is but 8 or 9 pounds per acre, and as this would only supply enough for about 13 bushels of wheat, to secure larger crops he suggests the use of nitrate of soda, to make up the necessary supply for thirty or forty bushels. He obtains that result by its use over the land where none was applied. It is too long a question to enter into at this time, but I will simply say that this estimate of 8 or 9 pounds of nitrogen, reaching the soil through the natural channel, is far below the estimate of any other scientific investigator I have any knowledge of. A number have made the calculation, and the lowest estimate I have seen far exceeds this amount. The amount of nitrate of soda recommended by him in a letter to the writer, was 275 lbs. to the acre. I tried it last spring, on my wheat, and from that day to this have not seen the slightest effect to mark the spot where it was applied, but the season was a bad one, and I shall repeat the experiment in a few days. To secure a larger crop, suppose all the farmers of Delaware, and I mention this State as being the smallest, would desire to adopt his suggestion, the impracticability of it will appear when I say, that it would take a hundred of the largest ships to bring one dressing of it to the State, which, at the present price of nitrate of soda, would take millions of dollars to



pay for, and this, he says is only good for one season, and where would the supply come from for the largest State may well be asked. From one of my fields the past season a fine crop of wheat was harvested, and for the past fifteen years, not a pound of ammoniated phosphate has been applied except in my experiments, and during that time it has been constantly cropped with corn, oats and timothy, and I am positive there is at this time more nitrogen in the soil than ever, and I feel sure it has been in cultivation for over two hundred years. The largest growth of wheat on the field was where the cornstalk, weeds, &c., were burnt, and at this time the clover on the same spot is ahead. The numerous experiments of my own, along with those of many practical farmers I could name, render it clear to me that our worn out lands can be improved and brought to the highest state of productiveness without purchased nitrogen, and when this fact is realized there will be greater inducements offered to those who own worn out lands, to make an effort in that direction. The sowing and turning under of the common, black-eyed peas has proved a valuable agent in improving land, and these will grow where clover and some other plants would entirely fail.

The force by which plants are enabled to build up themselves by decomposing binary compounds exists with much greater power, in some than in others, and that power seem greatest in the lower order of plants. Moss and ferns will extract from primary granite their food, while higher plants would fail to show any life. The fact that peas will grow on the poorest of land bears evidence that not only nitrogen is obtained from the inorganic kingdom, but that phosphorus, potash, magnesia, &c. exists in the soil, and through the force of the pea, the binary or mineral matter is decomposed and the elements drawn into the plant, and when at the proper time turned under, deposits by their decay carbonaceous matter in the soil, rendering it more porous and at the same time furnishing mineral matter in such a condition that higher plants will be able to appropriate it, that lacked the power to do so when in its previous condition. The earth presents matter in four conditions as follows: elementary, binary, ternary and quaternary, or in other words, elementary, mineral, veg-

etable and animal, hence we start with elementary followed in regular order by the others, and for this reason I claim that vegetable matter is built up by the destruction of the binary compounds, which includes water, carbonic acid and the different salts and oxides, and by the destruction of the vegetable or ternary compounds animal life is sustained, and when life ceases to exist a revolution takes place and elementary and binary compounds, such as water, carbonic acid, nitrogen and some phosphoric acid, lime, potash &c. again make their appearance and in a condition to re-enter the vegetable kingdom. With these views poorly expressed, I claim that animal matter is not plant food, and the stuffing of it into fertilizers for the little nitrogen it may contain, which becomes active when the revolution takes place, is not only useless but leads to an enormous expense to the farmer for the little sip it may give the plant, for the first few days of its growth. Thanking the members of the Academy for their attention, in conclusion I shall say that I hope to be able to give you some of the results of my experiments the coming season, on a field of wheat. On this field not a pound of ammoniated fertilizer, to my knowledge, has been used, yet the wheat bids fair to exceed any crop I have ever raised and the timothy indicates it, like the wheat, is securing nitrogen from some unknown sources.

THE German carp, the valuable food-fish recently introduced to this country, is making its way to all parts of it with great rapidity. Mr. Abel Wright, who began with two or three dozens of the carp three years ago, thinks that he now has at least a million in his pond at Griffin, Ga. He has sold more than 5000 at twenty dollars a hundred, and cannot keep up with his orders. He bears out Mr. Seth Green's statement that one can almost see the carp grow, so rapidly does it increase in size. Mr. Green asserts that an acre of water can be made as profitable as an acre of land, and it does not cost much to make the experiment.

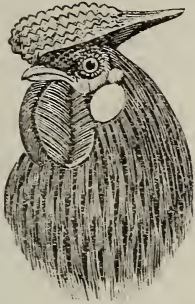
#### DON'T DIE IN THE HOUSE.

Ask Druggist for "Rough on Rats." It clears out rats, mice, bed bugs, roaches, vermin, flies, ants, insects, 15c. per box.



## POULTRY HOUSE.

Conducted by T. B. Dorsey,  
St. Denis, Baltimore Co., Md.  
**The Black Hamburg.**



Of all the varieties of fancy poultry, there are none which equal the Hamburgs in beauty. With all the symmetry of the Game they have a lighter, less muscular frame and consequently infinitely

more grace and beauty. The difference between them can possibly be more aptly illustrated by comparing them to two well known breeds of horses than aught else I know.

Take a thoroughbred race horse in full training, all the beautiful lines and exquisite proportions, but with the powerful framework and rugged muscles showing through the coat, the keen eye and fine drawn head, and you have the Game. Now take the same horse, put in an Arabian cross to reduce size and bone, keep him fat and well groomed as a dainty riding horse and you have the Hamburg. The broad rose comb, always so brilliantly red and contrasting vividly with the snow white and smoothly fitting ear lobe, gives additional beauty to the head and takes away from it the savage, defiant look, so peculiar to the Game. In style, station, pride and haughtiness of carriage, alertness and ease of motion there is scarce a shade of difference. They are smaller fowls but very tender for table use, and the cream of egg-layers. Active, restless and energetic they are easily kept, require little feed, rarely ever show any desire to set, and are almost equal to a machine for producing eggs. The blacks are the largest of the six varieties, lay the largest eggs, and are generally considered the hardiest. Their plumage is a rich greenish or purplish black, with an indescribable gloss and sheen and is in beautiful contrast to the snowy ear lobes and brilliantly red comb and wat-

les. They are intolerant of confinement, and will pay for their keep five times over in eggs. The young chicks are a trifle delicate until after their first feathering, as they feather very rapidly, and this being an exhaustive process, their growth does not keep an even pace with it. This however can be easily obviated by a little extra care and attention in frequent feeding, and after this season is over they are as hardy as possible and mature with wonderful rapidity. They are not bred in the State in any degree as they should be, and in fact, except in the hands of a firm who advertise in the *FARMER*, I know of no breeders in our section. In Pennsylvania, they are vastly more appreciated, and should be in the South, for whose climate they are particularly suited, as cold and wet are far more unsuitable to them than any amount of heat.

### Milk for Poultry.

Those who keep one or more cows, whether they are on a farm or merely on a small country place, will find it more profitable to feed their surplus milk to the fowls and chicks, than to give it to the pigs, as is generally done, for poultry meat (as well as eggs,) is more valuable than pork. In no other way can the same amount be obtained from the sour and skim milk. The poultry are very fond of it indeed, and it not at all injurious, though some unjustly claim that it produces diarrhoea, and prevents in a marked degree, many of the ailments and disorders to which poultry are subject under certain unfavorable circumstances and conditions. Some advocates of the milk diet for poultry even go so far as to claim that it secures an entire immunity from disease, but this we are not yet prepared to admit as assured. That it keeps the fowls healthy and thriving to a remarkable degree, an experience of several years in feeding it to our birds, convinces us beyond a possibility of doubt, and breeders generally will do well to try it, if they have the opportunity and have never yet done so. It would not pay, however, to buy milk for the purpose, unless it might be for a very few choice fowls, but where there is a single cow kept, or a dairy, there is always enough refuse milk to supply the poultry with all they need. It is best fed when thick or curdled, though

the birds will not refuse it in any form. When they are supplied with plenty of milk, they do not either need or require water, as the milk takes the place of it very nicely. It is invaluable for the breeding and the laying fowls, while the fattening fowls not merely relish it, but thrive on it wonderfully, in connection with strong grain food in the most desirable form.

For young, growing chicks, it is one of the most healthy things that can be given in connection with their regular food, and it seems to supply just the material they must have to make a rapid, vigorous and healthy growth. Those who have not tried it, should give it a trial this spring, and we think that they will continue it as long as the milk supply holds out. The fowls take to it as naturally as a cat does to fish.—*Poultry Monitor*.

### Watch the Combs.

Those who have merely small flocks of poultry, can give them far more individual care and attention than can be accorded to large flocks, numbering up in the hundreds, and this is the principal reason why small flocks of poultry pay a far larger percentage of profit than do larger ones, tho' enthusiastic amateurs or beginners are sure to *figure* differently on paper at the outset, only to find how far wrong they were in their calculations. When only a moderate flock of pure-bred birds are raised, each season, it is easy to detect and note any change or peculiarity which may occur, and at once take measures to remedy the trouble, while disease or disorders of a virulent nature might gain a firm foothold in a large flock before any danger was apprehended or suspected.

One of the most unmistakable signs of sickness or disease amongst poultry is the changing color of the combs of the fowls. for systemic troubles are sure to be quickly evidenced in the combs, which, when the birds are in perfect health, retain a bright, deep red color, but, when sickness takes the place of health, the comb at once commences to lose color, and, as the disease or disorder progresses, the color continues to recede, the comb soon assumes that deadened or ashen color which gives the experienced breeder unmistakable signs of ill health amongst his birds, and he at once takes measures, and active ones, to over-

come the evil. While the changing color does not indicate the nature or the kind of disorder, it gives unmistakable evidence of the presence of some trouble, and it then remains for the breeder to diagnose the malady, and to apply suitable remedial agents—even if it be an *axe and chopping block*, which is frequently the cheapest and most desirable one in the end, for it effectually prevents the spread of any contagious or infectious disease.

It seems that nature has made the combs of the fowls as sensitive to the changes going on in the system of the fowls, as it has done the tongue of human beings when in ill-health, and an experienced progressive breeder will do well to heed these changes in the management of the poultry, if he reasonably expects to reap a fair reward for his outlay of cash and time, and expenditure of patience and corn.—*Poultry Monitor*.

### MAGNITUDE OF SOME OF THE SMALL INDUSTRIES OF THE UNITED STATES.—

At the annual convention of the American Agricultural Association, President, Col. N. T. Sprague, in his opening address gave some remarkable facts and statistics, among other good things he said: "The poultry crop, for instance, was said to be in value more than one third of that of the cotton crop. The butter product of this country for 1880 was 1,000,000,000 pounds, and of cheese 300,000,000 pounds, and in the same year we exported of cheese 130,000,000 pounds and of butter 40,000,000 pounds, amounting to more than \$20,000,000. A cheese made in Iowa, weighing more than three-fourths of a ton, took the prize, a silver medal, at the late great cattle and dairy show at Birmingham, England. The first shipment of cheese from this country was made in 1830, consisting of some 10,000 pounds. More than 200,000 head of cattle have been landed in Liverpool alone from this side of the water in the year of 1881. How does our country compare with the leading dairy countries of the world? Great Britain and Ireland have 3,708,776 milch cows, France has 4,513,765, Germany has 8,962,221; America has 13,000,000—we having 45 per cent more milch cows than any one of the leading dairy countries of the world,



## HORTICULTURAL.

For the Maryland Farmer.

### Novelties in Small Fruit.

It is often quite puzzling to the grower of small fruits as to which kinds to plant in the family garden or far market, so numerous are the candidates brought to notice each season. The owner of every first-class garden wishes to obtain and cultivate only the choicest varieties. He scans the catalogues and other plant growers, and after much thought, study and inquiry makes a selection, which is no easy matter, as each nurseryman seems to have something far superior to all others, which he takes care to sell at a high price, until it becomes public property and ceases to be a novelty. Very often the lover and grower of small fruits is disappointed in his selection, and time, labor and money lost.

This, however, is not always due to the dishonesty of the nurseryman who sends out the variety, but failure upon the part of that particular variety to adapt itself to changes of soil and locality. As Roe expresses it, the youth who seems such a prodigy at home, astonishing his parents and friends by his seeming superior abilities, is often forgotten or passed unnoticed when sent out into the world. So it is with many of the chance seedlings which come into notice each year. Such is the rage for novelties in fruit, now-a-days, that large sums are paid to secure control of promising varieties as they are discovered, notable among these are the Bidwell, Manchester, Big Bob, Jersey Queen, Legal Tender, &c., among strawberries; Sandregan, Cuthbert, Pride of the Hudson, Gregg, and other raspberries, so it is of the Kieffer pear, Prentiss, Pocklington and other grapes, some have indeed proved themselves to be great acquisitions. Each year marks improvement in the size, quality and productiveness of almost every variety of fruit in cultivation, and the high prices paid for novelties has the effect of greatly encouraging this introduction of new varieties.

It is of course to the interest of all growers of small fruits, whether for home use or market, to secure the best, but caution and care are necessary in their selection. It is best to leave costly experiments to those

who can afford them and wait patiently until they have been thoroughly tested and the plants plentiful enough to be bought for reasonable prices. There are fortunately many excellent old varieties from which selections can be made in safety, and we question whether some of them will be superseded speedily by better ones. One thing has been demonstrated however in regard to the different kinds of strawberries, and that is a tendency, after a number of years to *run out*, as witness the disappearance of many of the older sorts known to our boyhood days. We are, however, encouraged by seeing their places filled by better sorts, the like of which was unknown to our fore-parents; and it is to be hoped that this improvement will go on until perfection is obtained in the interesting occupation of fruit growing.

ARUNDEL.

### Interesting and Valuable Extracts from the Transactions of the Massachusetts Horticultural Society for 1881.—Part I.

#### LIMA BEANS.

Mr. Smith said that, having been quite successful in the cultivation of this vegetable, he had been frequently asked for his method. He sows the seed about the middle of April, (being careful to place the eye down,) in what are known as "cucumber boxes," filled with loam, five seeds in each. The boxes are without bottoms, 6 inches in height, seven inches square at the top, and eight inches square at the lower part, and are made of half inch stuff. They cost six dollars and a half per hundred, and his have already been in use ten years. He was first to use them to forward Lima beans, and finds them invaluable for this purpose. When the beans are planted the boxes stay in the cold grapery. When the plants are about two feet high, the ground is prepared and the moulds are set out, and a hole large enough to receive the box is made at the foot of each. A box is then lifted on a shovel and placed in the hole and the shovel withdrawn. The box is then removed by lifting up; the object of making the top smaller than the bottom being to admit this.

#### POTATOES.

Mr. Wilder said that the Early Rose is the only potato used in his family. It is



both early and late. There may be others as good.

Mr. Wetherell said that Breese's Prolific is of better quality than the Peerless, but not so productive. The Early Rose is the most productive of all.

The chairman, Mr. John B. Moore, had found the Early Vermont more prolific than the Early Rose, and it is said to be fifteen minutes earlier. It is a seedling from the Early Rose, and he prefers it to its parent because the vine is stronger. For market he wants the largest potatoes he can get, because they bring more; but for his own eating he chooses those of medium size. The Snowflake and some others are of better quality than the Early Rose. In June, he prefers the Mammoth Pearl, a variety which originated in Ohio; it is very productive, has remarkable keeping qualities, and is very white when cooked. Vegetables are of better quality for having good culture and growing rapidly. There is no difficulty in growing good potatoes. If whole potatoes are planted they produce too many vines, and there will be many small potatoes and only one or two strong, vigorous ones. He cuts up good, strong potatoes into pieces with two eyes each. He has seen splendid crops from small potatoes, but on general principles would not recommend planting them. Potatoes are smoother for not over-seeding.

Mr. Wetherell said that his brother planted one-half a field with medium sized potatoes, and the other half with small ones; the yield of the former was more than double that of the latter.

William C. Strong spoke of B. K. Bliss's experiments in producing a stock of the Early Vermont potato from green cuttings, and said that the tubers produced were as large as those grown in any other way. The cuttings are made like the verbenas or fuchsia cuttings. It is the same with the Early Rose; under the same culture the tubers are as large, and the quality as good as when grown from tubers.

#### **TOMATOES.**

Mr. Wilder said that the Paragon is as good as the Acme. Mr. Livingston, who originated the Acme, says that the Livingston's Perfection is superior to the Acme. These improved tomatoes are as rich in their way, as a fine peach in its way, and only want a little sugar added to them.

The speaker thought that the tomato had been brought to perfection, and that it is a matter for rejoicing that any vegetable can be improved to so high a point. For home cultivation, tomatoes are greatly improved by training; he planted them against vacant spaces on his grape trellis, and they grew six or eight feet high, and produced four times as much as those trailing on the ground.

Mr. Grant said that he invariably trains his tomatoes to an open fence, trellises or brush, and the fruit keeps sound and perfect longer than when lying on the ground. He deems a trellis of some kind indispensable.

#### **PLUMS.**

The Chairman, Mr. Moore, said that he had been requested to speak of his success in raising plums. He thought the time had come when there should be no difficulty in raising this fruit. He felt the want of such plums as he had, when a boy, and he got thirty trees from Ellwanger & Barry, to see whether he could beat the curculio. He planted them in his hen yard and trimmed them up so that the hens should not fly up into them, and they have borne considerable fruit for the last two years, and there has not been a curculio mark to be seen on it. The trees get manure enough from the droppings of the hens. Four trees outside had the fruit marked with the curculio, but he dug out the eggs with the point of his knife and they matured good crops. The only trouble in raising plums, besides the curculio, is the black knot, and he had had only two or three of these, which came out on the trees. He cut them out to clean sound wood, removing all that had a diseased granulated appearance. It is said that the spores of the fungus which causes the knot, mature after the knots are cut out, and to avoid the risk of their propagating, he put all that he cut out into the stove. The wild plum and cherry trees, on which the knot is also found, should be cut down and burned. He shortened the long, vigorous shoots two-thirds, so as to make broad, spreading trees, rather than tall ones, and the result is some very vigorous and pretty trees. In jarring trees to shake down the curculio there is danger of starting the bark, but the hens lay eggs, raise chickens and take care of the curculio. He was surprised to hear an old horticulturalist like

Mr. Hovey, maintains that the black wart is caused by the curculio. Some of the best plums are the Green Gage, Washington, Jefferson, Smith's Orleans, Pond's Seedling, Bradshaw, Lawrence's Favorite, Imperial Gage and Coe's Golden Drop. He planted his trees about twelve feet apart. Cutting back has a tendency to produce a good deal of small wood. He saw no reason why he and all others should not raise plums.

#### PEARS.

John C. Newton, being called on, said that his experience in horticulture had been confined mainly to the cultivation of pears. For two years he had been troubled with pear blight, which had destroyed his best trees. He asked whether it was not influenced by too high culture.

Mr. Wilder said that he never saw a pear tree over manured, though the late Samuel G. Perkins ascribed the death of a large Seckel tree to plethora, by manuring.

Rev. F. L. Capen had seen pear trees killed by the application of excessive quantities of green manure.

Mr. Newton said that he would not put green manure to a pear tree, but would compost it with loam and let it lay from twelve to eighteen months and turn it over three or four times.

Mr. Fillebrown thought there was no such thing as over-manuring. In the market gardens at Arlington, large quantities of fresh manure are used. At Philadelphia, in the month of December, he was surprised to see large quantities of night soil applied to the ground. He thought it a very coarse way of raising vegetables, and was astonished to see vegetables grown by it.

R. G. CHASE & Co., Nurserymen, are advertising in our columns for agents. Those who can fill their requirements would do well to address them.

BIG RESULTS FROM LITTLE CAUSES.—"Do you know?" remarked a man to his friend on Chestnut Street, a day or two since, "I believe both Conkling and Platt had a bad case of skin disease when they resigned!" "What makes you think so?" inquired the listener in astonishment. "Well you see they acted in such an *eruptive* manner—so *rash*-ly as it were. Save?" "Oh, yes, I save," replied the other, "they were *boil*-ing over, and merely resigned to *humor* themselves, I suppose." If such be the case, the National difficulty might have been averted by supplying Swayne's Ointment for skin diseases.

#### List of Patents.

##### FOR INVENTIONS RELATING TO AGRICULTURAL IMPLEMENTS.

*Bearing date February 7th, 1882.*

Reported expressly for this paper, by LOUIS BAGGER, & Co., Experts and Solicitors of Patents, Washington, D. C.

Shovel Plow Geo. S. Agee, Mint Hill, Mo.  
Flower Shears, J. S. Badia, Philadelphia, Pa.  
Fertilizer Distributor, G. D. Baier, Lovettesville, Va.  
Harrow, J. H. Barley, Sedalia, Mo.  
Fruit Drier, J. O. Beazley, Urbana, Va.  
Plow, F. R. Cooper & J. Lemmon, Colerain, O.  
Cornstalk Harvester, W. T. Ely, Freehold, N. J.  
Harrow and Pulverizer, B. L. Hodgson, Levant, Me.  
Plow Attachment, R. V. Kennedy, Modena, Mo.  
Clamp for Plow Beams, J. A. McNeal, Montgomery Co., Md.  
Plow, E. D. Meagher, South Bend, Ind.  
Cultivator, J. Williams, Dublin, Ind.

*BEARING DATE FEBRUARY 14, 1882.*

Plow, J. J. Adcock, Lubliqua, Ga.  
Horse Hay Fork, W. Andrews, Buffalo Grove, Iowa  
Corn Planter, G. W. Brown, Galesburg, Ill.  
Grain Binder, H. J. Case, Auburn, N. Y.  
Potato Digging Machine, H. D. Harrington, Hoosac, N. Y.  
Tongue for Agricultural Implements, J. J. Hoke, South Bend, Ind.  
Harvesting Machine, J. W. Hull, Alquina, Ind.  
Fruit Drier, J. J. Johnston, Columbiana, Ohio  
Vase for Cultivating Strawberry Plants, J. J. Johnston, Columbiana, Ohio.  
Hedge Trimmer and Mower, J. V. Lattner, Waxahachie, Texas.  
Hay Press, P. Lord, Montreal, Quebec, Canada.  
Grain Separator, L. Morgan, Ft. Washington, Wis.  
Weed and Lawn Mower, A. T. Pike, Clarinda, Iowa  
Sulky Plow, F. T. Plice, Raoul, Grevenes, France.  
Corn Sheller, J. W. Richer, Chelsea, Mass.  
Hay Wagon, W. M. White, Elini, Wash. Ter.  
Potato Planting Machine, C. L. Woodward, Angola, N. Y.  
Harvester, C. Young, Auburn, N. Y.

*BEARING DATE FEBRUARY 21, 1882.*

Hand Corn Husker, A. W. Brinkerhoff, Upper Sandusky, Ohio.  
Fertilizer, J. Brown, Edinburgh, Scotland.  
Milling Machine, A. W. Campbell, Hartford, Conn.  
Cotton Pickers Wagon, C. P. Collins, San Marcos, Texas.  
Fertilizer, J. Flsasser, Houston, Texas  
Grain Tally, J. Griffith, Des Moines, Iowa.  
Harrow, G. Jackson, Boscohel, Wis.  
Farm Gate, J. J. Johnston, Columbiana, Ohio.  
Seed Cup for Grain Drills, J. King, Indianapolis, Ind.  
Alarm for Millstones, W. Laubach, Detroit, Mich.  
Thrashing Machine, J. L. McDonald, Shakopee, Minn.  
Clover Seed Gatherer, Stribling Springs, Va.  
Grain Drill, G. W. Rude, Liberty, Ind.



# MARYLAND FARMER

A STANDARD MAGAZINE,

DEVOTED TO

Agriculture, Live Stock and Rural Economy.

EZRA WHITMAN, Editor,

COL W. W. W. BOWIE, Associate Editor,

141 WEST PRATT STREET,  
BALTIMORE, MD.

BALTIMORE, APRIL 1st, 1882.

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EZRA WHITMAN.

☞ COL. D. S. CURTIS, of Washington, D. C., is authorized to act as Correspondent and Agent to receive subscriptions and advertisements for the MARYLAND FARMER, in the District of Columbia Maryland and Virginia.

☞ Our friends can do us a good turn by mentioning the MARYLAND FARMER to their neighbors, and suggesting to them to subscribe for it.



### Silos and Ensilage.

What is a silo, and what is ensilage? are questions yet often asked by the uninitiated.

A silo is a French word meaning a prepared pit, cellar or receptacle in which green provender is preserved for future or winter use for cattle food. Ensilage is the preserved food, such as grass, corn in its green state, stalk, leaves and even unripe ears, or any kind of green vegetable growth that is cut up fine like cabbage for sour krout, and packed closely in the silos and weighted heavily and securely to exclude air and compact it into a tight mass, during which operation it blanches and acquires a slight sourish odor and alcoholic taste, much relished by all kinds of stock after they have become used to it, which will be in a very short time.

Before we proceed further we will here state that we have ever been impressed with the importance of ensilage, from its first introduction in France, in 1873, and we flatter ourselves that we were the first to publish an authentic account of its success in France, together with a detailed statement as to its properties, and how it was then prepared by its originator, Mr. Goffart, in France. This we did in our pages of the November and December numbers of the MARYLAND FARMER 1875, as a translation from the French, and we then urged our farmers to try it. In 1876, Mr. Francis Morris, near Ellicott City, in this State, built silos and successfully tested the system. Since then we have enriched our columns by writings on the subject by our esteemed correspondent, Mr. Morris, and many others upon the subject in other journals, and thus kept this important measure before the public eye, constantly, for the last six years. But we have become recently more than ever impressed that it is to become, at an early day, one of the grandest adjuncts to successful farming and stock-raising that has ever been vouch-

safed to man. During the past winter, we have personally visited several and one of the largest and best appointed silos in the country—Mr. Havemeyer's, in New Jersey—and seen the daily working of the system, and have held long and interesting interviews with those who have had practical experience, and from all we have seen and heard, we are more convinced that, in the language of the ensilage Congress, "*the ensilage system is of great advantage to the farming interest and to all mankind.*"

*Its history and progress.*—"M. Auguste Goffart, of France, made the discovery in 1873, that green crops could be preserved with all their juices, by compression in a water-tight pit, under a weighted descending cover. In 1875, the French government recognized the merit of the discovery with the Legion of Honor." The same year, a full account of the discovery, with details, was published in the MARYLAND FARMER. The next year, 1876, Mr. Francis Morris erected silos and was partially successful. In 1878, Goffart's treatise was translated and published, with American notes, by Mr. J. B. Brown, of New York city. This book had a wide circulation, and many enterprising farmers have since experimented in some form with silos, and nearly every one has been delighted with their success. A Congress of ensilage men was called by Mr. Brown, and the result of that meeting as seen elsewhere in these pages, was its formal recognition as a valuable discovery, and a strong recommendation that it be engrafted upon the present progressive system of economical husbandry in every part of our nation.

*Making the silo.*—A silo can be made of brick, or stone, or wood, or simply a cellar dug where the soil is dry and stiff, cemented or not. Of course, but few localities are found suited to the latter sort, and then there will be always more or less loss of ensilage around the sides, even when these

dirt walls are cemented. The wooden or frame silos are made of timber and plank, like an ice-house, with double planking, 6 or 8 inches space, to be filled in with sawdust or charcoal, or other substance to exclude all air and moisture. Brick or stone walls are best, and cemented, as also the bottom to be gravel and sand and cemented. Every silo should have a roof over it to turn rain and bad weather. The silos can be made above or below ground. Those above ground are preferred by those who build large ones. They can be of any dimension to suit the owner. Those 10 feet wide, 16 feet deep, and 20 feet long, to be lengthened to suit convenience, are most used. They can be of larger or smaller dimensions, as a farmer's needs require. The silo is filled with green rye, pea vines, millet, clover, sorghum, oats, any of the grasses, or corn as it is cut when in tassel. Any and all of the materials are cut by an ensilage cutter, or ordinary hay cutting machine, in lengths from one inch to three, and evenly distributed in the silo, in as short a time as practicable, say in one day, though many take two or more days to fill a silo. When full, lay on plank one and a half inches thick, close together, on which apply the weight as evenly as possible. We think this is the important point, weight enough, not less than 300 lbs. to each square foot, equally distributed. For this weight some use dirt alone, but for convenience, we think with the majority, it is best to use stone, or bags filled with dirt or sand, or barrels filled with sand or dirt. The weight can then be easily ascertained and easily removed when the silos are wanted to be opened.

*The material of which ensilage is made.* We have already enumerated several sorts of green food, but the best, under all circumstances, is corn. In a fair season, on rich ground, it will yield enormously, some claim 80 tons, but we say twenty-five or thirty tons, per acre, and under usual circumstances, from fifteen to twenty tons

may be reasonably looked for, which is a sufficient quantity to justify the planting and cultivating the same for a supply of green, succulent food for cattle in winter. By cattle we mean all kinds of stock, cows, horses, pigs, sheep, young and old stock. The cultivation of this crop for ensilage is simple. Prepare the ground well, and with a corn drill, or with a plow, mark off the rows 27 or 30 inches apart, and plant or sow the corn in the rows so as to have 8, 10 or 12 grains to the foot. After it comes up give it one or more workings with the cultivator. When it tassels or a large portion tassels, cut it with a reaper or with corn knives, close to the ground, and as fast as cut, send it in carts to the silo, and have it run through the cutter and spread in the silo. A damp or bright day, or even a light rain makes no difference. Here is the great saving in securing a clover crop. Rainy weather does not hurt the clover ensilage, but would ruin clover for hay. So with other grass crops or forage crops, like corn, sorghum, etc.

*Cost of silos.*—The cost of the most expensive and durable silo to preserve 100 tons of ensilage, would not be one-third the cost of a building required to store 100 tons of hay. Some can be built at little or no cost; except labor at odd times. The materials for those built of stone or wood, are often also found on the farm and can be built at small cost, except the labor expended.

*The economy of ensilage.*—It is claimed, and we believe it, that by this system, twice or three times as much stock can be kept, in better order on the same farm, than under the old system of early and late pasturage, and hay and grain in winter. We do not go so far as many do in believing that stock will do well on ensilage alone. We think that some corn meal, corn and cob meal, or bran, should be fed with each feed of ensilage, or at least once a day. The day has past when it is thought to be wise or economical to perish



stock all winter on straw and corn fodder, poorly cured. The rule with good farmers now, is to feed grain and hay to their stock in winter. To keep a dairy cow in full milk, 50 lbs of ensilage, 3 quarts of corn meal, or 4 quarts of bran and 2 lbs. of oil cake or cotton seed meal a day, is ample food, and this will not cost half as much as if she had what hay she could eat with one-half of the above ground food, per day. Hence it is safe to say that stock can be equally as well kept, at half cost, or beef made at half cost, where ensilage is used instead of hay, or corn fodder or millet.

These are our views, and in support of them we give the following letters addressed to us in reply to our letter of enquiry to some of those gentlemen who have tried this new system.

COLORA, March 14, 1882.

E. WHITMAN, Esq.

*Dear Sir.*—In reply to yours of the 7th inst. I would be happy to give you all the information in my power, which, however, is limited.

I have fed ensilaged corn fodder two winters in a small way, keeping from ten to fourteen cows, two horses and some young stock. Have tried corn fodder of large growth, planted for field crop, also sown thickly in drills 30 inches apart. There is very little difference in the feeding value. My ensilage will not do to keep stock on alone, with corn meal and wheat bran it does well. In my opinion the ensilage has a high value as an *additional* feed. My cows will eat well, rough feed to the extent of one-third rations. By the use of the silo I am enabled to keep more than double the stock I could without it. I can most certainly recommend it to others, *it will pay*. In this neighborhood, to my knowledge, are four silos, two of which have been in use the second winter; two but one. All are well satisfied with the ensilage, all expect to continue its use. One of these is an earth-pit, one rough wall, the other two are stone, faced with cement, and these are the best, but the others will do. If you would like to examine for yourself I would be pleased to send you a sample. Respectfully,

J. A. ROMAN.

Colora, Cecil Co., Md.

OAKLAND, March 9, 1882.

E. WHITMAN, Esq.

*Dear Sir:*—I enclose you my views on the question of ensilage. Every farmer with a feed cutter can raise a crop. Failure is not a possibility. Silos can be made in the field where it is raised, at the expense of a few dollars, and I can put away one hundred tons per day. It is the greatest gift God has given to man and will work an entire social revolution in this country.

*Ensilage.*—After all that has been said and written on the subject above named, it is now only a question how it can be made most available for common use. The growth of maize, broadcast or in drills, is only a question of tons to the acre, and although I am in favor of drills from twenty inches to two feet apart, and sowing a bushel to the acre, yet this is a case of land, manure and locality, and every farmer will know what will suit his land the best, and what amount of manure and cultivation will give him the largest yield. I recommend the making of a silo or trench in the field where the maize is grown. A yoke of oxen and a scraper will make a trench seven feet wide at top, five feet wide at bottom, six feet deep, or deeper if you desire, and as long as you desire. When the corn is in tassel cut it down, haul it to your feed cutter, cut it into inch pieces and fill the trench. Tread it down, cover it with felt and then haul over it one or two feet of earth. To preserve it against fermentation the mass of fodder must be airtight, the oxygen of the atmosphere will destroy it. After you have covered it with earth, watch it and close or fill up any cracks, making the covering a solid body. In sixty days it will be fit for use. Stock of every kind will eat it greedily—horses, cows, mules, pigs, sheep, all will eat it, and it possesses in feeding quality one-half the sustenance of timothy hay, in other words one ton of timothy hay is equal to two tons of corn fodder.

The importance of this crop cannot be realized at this day. Land which will produce fifty bushels of corn to the acre, will produce twenty tons of corn fodder, which is half the value of timothy hay, and if the latter is worth \$20 per ton, the corn fodder is worth \$200 per acre. But we will suppose that it is only ten tons to the acre, it is then \$100 per acre. If a farmer has raised 500 tons of corn fodder on fifty acres

of land, he has only to turn his corn fodder into beef, mutton, butter, milk or cheese, and for his fifty acres of fodder he will realize five thousand dollars in the same way as he now realizes \$20 per ton for each ton of timothy hay that he uses at this time to fat his cattle, sheep or oxen. In the butter and cheese counties of New York, they are in many cases putting half their farms in corn fodder. They claim that it makes the best butter that is made, and there is little doubt that we shall supply our own beef, mutton and pork in time to come, and all the world with cheese and butter.

Very truly, FRANCIS MORRIS.

In addition to these letters we herewith append extracts from the writings and statements made by several persons who are well known in the country as among the leading agriculturalists, and are practical as well as enterprising.

Mr. C. W. Mills, of New Jersey, in an address before the Farmers' Institute, at Grafton, among many other practical statements, said:

"The time to harvest the corn is when it is fully tasseled. It should be cut in the quickest possible time, with the least possible bruising—treading it down is the worst practice—into pieces two inches long and packed closely in the silos and then pressed evenly. Bags or boxes of sand will furnish the most even pressure and is best. The only necessary thing to be observed is the following; It is necessary to put the mass in a tight enclosure, and after it is prepared the lumber about the sides may be taken down if needed for any other purpose. It will not be affected by frost, and depends upon the close packing and uniform pressure. If properly prepared the disagreeable acidity will not appear.

"He kept on his farm, last winter, 120 cattle and 12 horses, for seven months, on the product of thirteen acres of ground, less than half the feed necessary with dry food. He is doing even more this winter, but mixes daily, four quarts of middlings for each animal. He cuts over fifty tons to the acre, and some acres had seventy tons. His fodder cost less than 80 cents per ton in the silo. He sows his seed about eight bushels to the acre. He harvests the corn in drizzly or dry weather, another advantage over hay. With 300 pounds to the

square foot, no water will gather at the bottom of the pile if there is no crushing. The pressure drives out the air; no fermentation takes place, but a change takes place. Like closely corked wine it cannot ferment but a change occurs, and when that is over, the wine will keep for years without change, so with ensilage. Cement floors are superfluous. The mass should be air-tight, irrespective of its receptacle. Cows are in this way kept at a cost of from ten to twelve cents a day. More milk is produced and of better quality. No flavor of the ensilage can be detected in the milk or butter."

Dr. John M. Bailey, of Winning Farm, in Massachusetts, and also owner of a large stock farm in Virginia, has written a very readable and instructive book on ensilage, and also an essay on the same subject, from the latter we give the following extracts, that go to fully sustain our own views as above expressed. Dr. Bailey says;

"Green grass and other forage crops contain over 80 per cent. of water; in the process of curing by drying, about 70 per cent. is evaporated. Now this 70 per cent. of water carries with it a large amount of valuable nutrition. That which passes off is just what makes the difference between June butter and winter butter. If it does not lose by drying the first time, how does it happen that it loses so much by drying the second time, after being wet? The *wetting* does not injure the forage or else cut feed would be injured by being sprinkled, and steaming fodder would be utter ruin. It is the *drying* after the wetting, that robs the forage of its value. The water which is dried out of the forage, leaves it in the shape of *hay tea*, and the first drawing is the strongest.

"The true test is, will the cattle *eat* and *thrive* upon it?

"My experiments thus far satisfy me that the value of corn fodder is doubled by the softening and fermentive process which it undergoes in the silos; that two tons of it are worth more to feed than four tons of corn fodder fresh from the fields, or one ton of best timothy hay.

I received the above analysis the last of April, and at once resolved to test it by experimentation. I selected two thorough-



bred two-year old Jersey bulls and weighed them. "Rossmore" weighed 960 pounds, "Hero" weighed 890 pounds. "Rossmore" was fed 40 pounds of ensilage, daily, and *nothing else*. "Hero" was fed 40 pounds of ensilage and three pounds of wheat bran, daily, and *nothing more*. June 2, I weighed them again, and found that "Rossmore" weighed 960 pounds, having neither gained or lost; showing so far as one experiment could, that 40 pounds of ensilage, containing over 80 per cent. of water, was sufficient to sustain in a healthy condition the functions of the animal system, and replace the waste tissue. His hair was smooth, he appeared to be satisfied and Sylvester thought he was gaining. "Hero," at this time, weighed 943 pounds, being a gain of 53 pounds in 34 days, or 1.55—pounds daily; as it took 40 pounds of ensilage to sustain the animal, it follows that 102 pounds of wheat bran, fed with the ensilage, produced 53 pounds of beef, (live weight.)

#### THE NUTRITIVE VALUE OF ENSILAGE

"That it is a highly nutritious food, is proven by the fact that my cows fed upon it during the winter, brought me very fine, large, strong calves—upon their feet and sucking almost as soon as dropped. My Vermont Merino ewes sheared upon an average, 9 pounds of wool, which I sold for 30 cents a pound at home. They also brought fine, strong vigorous lambs. The lambs were sired, part of them, by a pure Cotswold ram, and the balance by a pure Oxford down ram. They weighed, when born, from 6 to 12½ pounds each. Some of the Merino ewes bore twins weighing 17½ pounds. My Cotswold ewes did equally well, bringing lambs weighing from 10 to 15½ pounds each when born.

*Method of feeding ensilage.*—Dr. Bailey states:—"I remove from the silo 50 pounds of ensilage (about one cubic foot,) for each grown animal, daily, mixing one pound of oil meal and wheat bran to every 10 pounds of ensilage. I have a large box standing upon the barn floor, in which I mix it and let it stand about twenty-four hours before feeding. By that time it is quite warm; the grain addition has had time to become soft, and its digestibility is undoubtedly increased to a greater degree. There is in every 50 pounds of ensilage about 40 pounds of water—nearly all the animal requires. It is a great advantage to have

this amount of water *warm* when taken into the stomach. There has been no labor or fuel expended in warming it, which is quite an item. When animals are allowed to drink ice-cold water in winter, there is quite a large percentage of the food which would produce fat, consumed in raising the temperature of the water they drink from freezing cold to blood heat."

\* \* \* \* \* I am feeding my store hogs upon about 8 pounds of ensilage and one pound of midlings, to each animal weighing over 200 pounds. They are doing well, and the cost does not exceed two and one-half cents per day. Clover preserved by Ensilage would be excellent, and require no grain added to it. Poultry of all kinds eat it greedily. No hen fancier should be without a small silo in which to preserve green food for his fowls if he wants eggs in winter, or to keep his fowls healthy.

I feed it occasionally to my work and driving horses. It has as good an effect as an occasional feed of carrots or other roots.

In taking the ensilage out of the silo it is not necessary to replace the weights, neither does the ensilage require to be protected from freezing. There is sufficient starch, sugar, and alcohol to keep it from freezing. Neither does the summer's heat affect it. From April 15 to the 6 of June, 1880, I fed only three animals from ensilage which was not protected from the air. I frequently left some portion of the surface of the mass undisturbed for four days, at the end of which time it was warm to a to a depth of about four inches, and a white mould began to appear on the outside; all was consumed, however, with the greater relish. Out of all the ensilage that I have preserved not one-half of one per cent. has been wasted."

The editor of the *Southern World*, writing about the Silos erected under the direction of Dr. Bailey, at the Atlanta Cotton Exhibition, remarks:—

"It is not necessary for the successful preservation of the forage that the silos be underground. Mr. Garret, of North Carolina, who has been raising ensilage for two years, told us that he had abandoned the underground pits and uses a close room in his barn above ground on account of the greater convenience of feed-

ing. There is neither mystery nor difficulty connected with the storage of ensilage, the principle is an old and very simple one and its practical application most easy and natural. It will pay a family to put up ensilage if only one cow is kept."

It may be well to state that the weight of ensilage depends somewhat upon the material, the amount of weight it had been subjected to and the fineness with which it is cut. Some ensilage will weigh 45 to 50 lbs to the square foot, and some varies from 30 to 50 lbs, to the cubic foot. We should reckon a cube of ten feet will hold twenty tons of green fodder. Every cubic foot will feed well an animal one day, with 2 quarts of meal, or 4 quarts of mill feed added, any good hay or straw-cutter will answer for cutting ensilage. Some insist on its being cut very short, but some farmers have had good success without cutting at all.

### Farmers Congress Discussing the Merits of Ensilage and Silos.

The Congress of farmers to discuss the utility of ensilage as fodder for farming stock, the best means of its cultivation, and the proper mode of constructing silos as its depositories, held its closing session in New York city, in January, 1882, Francis Morris, of Maryland, in the chair. A letter was read from ex-senator Warner, calling attention to the amount of weight necessary to place upon the silos to insure the best preservation of the crop. This elicited quite a lengthy discussion, the general opinion being that the greater superincumbent pressure, the more perfect the ensilage would be, an important consideration however, being the exclusion of air. Other letters were read, including one from Dr. Eager, of Nebraska. He states that he can produce corn ensilage, at an expense of ninety-two cents a ton. As an off set to this statement, Mr. Wolcott, of Massachusetts, said that it costs him \$2.25 a ton to make ensilage from corn. The Congress next discussed at considerable length the three questions—First, how to feed ensilage; second, economic value as compared with other fodder; and third, improved farming methods. During the

discussion of the first question a member of the Congress stated that he had learned that Mr. Mills, of New York, had lost all of his horses through feeding them on ensilage. Mr. Mills said the story was untrue, the real fact being that one of his men took one of his horses to go and see his girl, and while engaged in talking to her, left the horse in the stable; there it was exposed to diphtheria, caught the infection and gave the disease to his other horses, all of whom died. On the contrary, he pronounced ensilage better food for horses than the best of hay and oats, to say nothing of the greatly reduced expense. In this connection, ex-Congressman O. B. Potter stated that he had experimented in feeding ensilage to fifty-six cows, and found that they gave more and richer milk than when feeding in pasture.

### SETTLING THE QUESTION.

After the assemblage of farmers had compared notes and thoroughly ventilated their views upon the various matter before them, they were treated to a brief address by the Rev. Dr. Ormiston, who owns a farm in Canada. In the course of his remarks the reverend Doctor stated that, while hereafter he should continue to preach religion on Sundays, he should preach ensilage during week days, a statement that elicited the most hearty applause. As an appropriate finale to its two days' session a resolution was passed to the effect that, *it has been a well established fact through six years of successful use in this country, and by the concurrent testimony of many intelligent farmers, that the ensilage system was of great advantage to the farming interest, as well as to all mankind.*

Following a brief address from the President, thanking the members for the interest they had shown in the subject-matters brought before them, and prophesying the best results from their free interchange of experiences and suggestions, the Congress adjourned for one year.

The full report of the proceedings of this Congress has been published by Mr. Brown, president N. Y. Plow Co., and contains very valuable information which should be in possession of every person who desires to build a silo or use ensilage. It is for sale at the office of the MARYLAND FARMER, price 30 cents per copy.



**The Coming Exhibition of the American Agricultural Association.**

Will an agricultural exhibition be held this year, in Baltimore; and what will be the advantages of a national exhibition in connection with our State Agricultural Society, over one held by our State society alone? We hear daily these questions asked, and I answer that it depends upon the citizens of Baltimore entirely whether a national exhibition will be held here or not the present year. No successful exhibition can be held anywhere without the combined aid and energies of the place where it may be held. I understand that a few of the influential citizens of Maryland, express the opinion that a State fair would be as desirable as a national exposition under the auspices of the American Agricultural Association. They labor under a great mistake, I think. The two would be essentially different in their effect and results. Perhaps there might be as many Maryland exhibitors at a State fair as there would be at a national fair, and the State fair might prove a great success, but that would not accomplish the chief object aimed at and especially desired by Baltimore. This city seems just now to need more manufactories to develop her resources, increase her population and enlarge her trade. Among the many schemes suggested to accomplish this desirable end is a national exposition under the joint influences of the State and the American Agricultural association to be held this year. Such an exhibition, it is confidently expected, would bring together manufacturers, stockmen and producers of crops, and of all the raw materials used in manufactures from all parts of the whole country, not limited to one or two neighboring States. I have not one word to say against State, county or town fairs, as great good results from them, and I hope to see them continue to increase in number and usefulness; but we can have only at long intervals a national exhibition in connection with the American Agricultural Association, which numbers over a thousand members already, and is on the increase daily, composed of the most noted agriculturalists and extensive manufacturers in the Union.

Owing to the peculiar locality of Baltimore, it is more favorable for a national exposition than was Atlanta for its recent successful cotton exposition. I spent one week

at that exposition and was astonished at the immense benefits that resulted not only to Atlanta, but to the whole South. I was told by reliable citizens that the exposition had built up manufactures in Atlanta and its vicinity that would not have been done in twenty years, without such a fair. With superior situation, inducements and shipping facilities to all parts of the world, surely Baltimore would realize much more than her enterprising sister city of Georgia by a creditable national fair. Is it to be doubted that the chief officers and members of the American Agricultural Association would bring the best products of their respective States to compete with products from other States, and to elicit for each, national notoriety? Nor is it probable that such an exhibition would fail to attract thousands of visitors from the various States of the Union, many of whom would for the first time realize the peculiar value that nature and circumstances have attached to homes and farms in old Maryland; and among this crowd of visitors, is it to be doubted that manufacturers would be found seeking good localities about the city and elsewhere in the State to fix a "plant" for carrying on some great industry? Of the hundredfold advantages to the city and State a national exhibition would be, it is too manifest to discuss. I feel sure if \$250,000 can be raised in this city, and the American Agricultural Association is invited to unite, that a grand exhibition can and will be held this year in this city, with unprecedented advantages to Baltimore and to the whole State, and with no pecuniary loss to the subscribers or stockholders in such an enterprise.

EZRA WHITMAN.

The above expressed our views in the Baltimore *American* of the 24th ultimo, and we now regret that the action of the American Agricultural Association, fixing upon New York city as the place for the first exhibition of the association has prevented our views from being carried out. We have now only to urge upon all who have at heart, the interest of Baltimore and the State at large, to unite heartily and make strenuous exertions for an extensive and superb State or inter-State fair, in the Autumn of the present year. We shall have more to say of this hereafter.

**The Great Sale of Percheron Horses**

At St. Mary's, the farm of Messrs. W. T. Waters & Co., near Govanstown, Baltimore county, Md., took place on the 22nd ult., and was well attended by gentlemen from different parts of the country, attracted by the superiority of the stock. The bidding was spirited and the sale of 25 animals realized \$23,325. The purchasers were

Imported Stallions.—Fandango, dappled gray, with white spots, 6 years, 16½ hands, \$1,700, O. F. Bresee, Rapidan, Va. Victor, dappled gray, 7 years, 17½ hands, \$1,775, S. W. Ficklin, Charlottesville, Va. Monarch, dark dappled steel gray, 6 years, 17 hands, \$1,475, Jesse M. Stetson, Neponset, Ill. Torreador, light dappled gray, 6 years, 16½ hands, \$1,250, Jesse M. Stetson, Neponset, Ill. Sultan, dappled gray, 6 years, 16½ hands, \$1,300, J. S. Delano, Denver, Col. Rapid, light dappled gray, 16½ hands, 6 years, \$1,700, Thomas J. Murphy, Buffalo, N. Y. Zulu, black, 6 years, 16½ hands, \$1,250, Frank Brown, Carroll Co., Md. Duke, light dappled gray, 6 years, 16½ hands, \$1,500, J. R. Smith, Purcellville, Va.

Imported Mares.—Beckie, steel gray, 7 years, 16½ hands, \$490, Jesse M. Stetson, Ill. Maggie, light dappled gray, 5 years, 16½ hands, \$1,000, O. F. Bresee, Rapidan, Va. Zoe, dappled gray, 6 years, 16½ hands, \$625, Jesse M. Stetson, Ill. Prude, light dappled gray, 8 years, 16½ hands, \$670, Thos. J. Murphy, Buffalo, N. Y. Leda, veined dappled gray, 6 years, 16½ hands, \$650, Jesse M. Stetson, Neponset, Ill. Topsy, dappled gray, 7 years, 17 hands, \$675, do. Juno, dappled gray, 7 years, 16½ hands, \$750, do. Lottie, light gray, 8 years, 16½ hands, \$320, S. W. Ficklin, Charlottesville, Va. Fannie, gray black, 5 years, 16½ hands, \$1,500, O. F. Bresee, Rapidan, Va. Mollie, dappled gray, 6 years, 16½ hands, \$900, J. S. Delano, Denver, Col. Lucy, light dappled gray, 8 years, 16½ hands, \$670, Michael T. Horner, Baltimore. Nellie, dark gray, 7 years, 16½ hands, \$800, J. S. Delano, Denver, Col. Judy, very dark dappled gray, 5 years, 16½ hands, \$600, J. L. Pittman, Shenandoah county, Va.

Pure Home-Bred Colts.—Jessie, dark

dappled gray, 3 years, \$750, Thos. J. Murphy, Buffalo, N. Y. Flora, dark dappled gray, 2 years, \$385, Jesse M. Stetson, Neponset, Ill. Rex, gray stallion colt, dropped in April, 1881, \$260, Richard R. Haines, New York city. Sue, gray mare colt, dropped in March, 1881, \$330, Michael T. Horner, Baltimore.

Mr Walters commenced breeding Percherons, in 1865, immediately after the civil war. In this sale he has sold out his breeding stock, will stop breeding for the public, and keep only just enough horses for farm purposes and breeding for farm usages. Alene, a mare, 20 years of age, imported in 1865, was shown just before the commencement of the sale. She presented as lively, fresh and coltish appearance as any of the animals sold, and had remarkably full and bright eyes.

A HUGE POTATO.—Our friend, Mr Saml. Tyler, of Butte City, Montana Territory, sends us an enormous potato, which he says, "is of the Snow Flake variety, grown in Deer Lodge Valley, 12 miles from the summit of Rocky Mountains and 20 miles from Butte City. The grower, Mr. J. L. Goodwin, says he has grown the variety for some years, and has averaged 200 bushels of large potatoes to the acre. The one sent weighed 2½ lbs. when first dug." We measured it and found it 9 inches long, circumference of the middle, 12 inches; 3½ inches thick one way, and 4½ inches the other, from side to side; one end 3 inches broad and the small end two inches. But few eyes, smooth and nice form. The largest and handsomest potato we have ever seen—a *curiosity*!

ERRATA.—In Mr. Sharp's paper, where the word "obtained" occurs, read *claimed* on page 116; and on page 118, where the word "revolution" occurs, read *re-solution*.

Mrs. Lydia E. Pinkham, 233 Western Avenue, Lynn, Mass., is rapidly acquiring enviable reputation for the surprising cures which daily result from the use of her Vegetable Compound in all female diseases. Send to her for pamphlets.



## THE APIARY.

For the Maryland Farmer.

### Directions for Hive Making.

Prepare for this season's honey crop while you have time. Do not wait until you have a swarm of bees before you think of a hive. Get everything ready now, such as hives, honey boxes and glass for honey boxes. Direction for making Langstroth hives:—If possible, get lumber already dressed on both sides and seven-eighths of an inch thick, and 10 inches wide. For sides of hive, two pieces 24 inches long, 10 inches wide; ends of hive, 14½ inches long; front piece, 9½ inches wide, back piece, 10 inches wide. Cut a rabbit on the upper edge of the end pieces, with a tongue plane, three-fourths of an inch deep. Cut a piece out of each side of hive, at top of front corner for portico roof, 3½ inches long, 1½ inches wide. Nail together so as to have a box just 20½ inches long, by 16 inches on top. Keep all of the pieces exactly even on top. Next, saw three boards 16 inches long by 10 inches wide. Rip one of these in two, tongue and groove the two wide and one narrow boards together for bottom, nail on the hive. Roof for portico, 19 inches long, 4 inches wide, nail on and let project out on each side 1½ inches. Side cleats 20½ inches long, 1½ inches wide, nail to side of hive, ½ of an inch from the top and even with portico roof. Back cleat, 19 inches long, 1½ inches wide, nail on even with sides. Now we have the hive complete, except frames and honey board. Sides of cap 23 inches long, 10 inches wide; ends, 16½ inches long, 10 inches wide. Nail sides to ends, making a box 23 inches long and 18½ inches wide. Top of cap, two boards 25 inches long, 10 inches wide, tongue and groove together, and after the top has been nailed on, put a strip over the joint 3 inches wide by ½ thick to keep out water. The honey board should be made of ½ inch white pine, if it can be gotten, and one piece without joints 21½ inches long, 16 inches wide; it should have cleats nailed on each end, cleats 16 inches long, ¾ inch wide, ½ inch thick. Frame can be bought cheaper than they can be made by hand, yet we will give directions for making: top bars 19½ inches long, ½ inches wide, and 5-16ths inches thick; bottom bars 17½ inches long, ½ of an inch wide,

and 5-16ths of an inch thick; end bars 8½ inches long, ¾ of an inch wide, ¾ thick. Nail so the frame will be just 17 inch long and 8½ inches wide on the inside; in nailing use inch finish nails. We would not advise anyone to undertake to make honey boxes, as they can be bought in the flat, ready to nail, a great deal cheaper than the lumber can be bought for to make them.

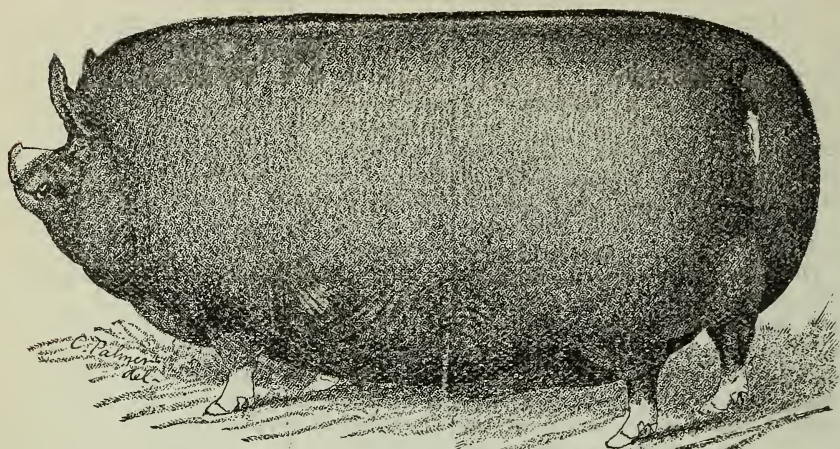
If you have never used the Langstroth hive, make one or two, by all means; this hive is free for everybody to make, as the patent has run out for some eight or ten years past. We have tried a good many of the different hives now in use and have discarded all but the Langstroth, it being a shallow hive, throws the surplus boxes close to the entrance, making a short distance for the bees to store honey after reaching the hive. It has no doors or places for the bee-moth to hide in, keeps out mice, and is in a compact form for winter.

### PAINT FOR HIVES.

Never paint a hive brown, or any dark color, as all dark colors absorb the heat. We have seen dark colored hives get so hot that the honey and comb would melt and fall to the bottom of the hive in a mass, thus destroying a whole colony of bees. Paint with pure white lead and boiled linseed oil, two coats; it would be well to paint every joint before the hive is nailed together. If many hives are to be close together, the fronts of different hives can be painted different colors: red, green, yellow, blue, or anything to suit fancy. Berryville, Va. J. LUTHER BOWERS.

P. S.—The bee-keepers of Virginia and Maryland will meet at the Court House, in Hagerstown, Md., on the 20th of April, at 1 P. M., to organize a beekeeper's association. The county papers of both States will please notice. L. B.

HOW LONG WOULD IT TAKE TO COUNT TWO MILLIONS?—Over two million volumes of the revised edition of the New Testament were sold on the first day of its issue. These figures can only be equalled by the enormous sale of Swayne's Ointment for Itching Piles, which is universally used as a standard remedy for stopping the itching at night, when one thinks that pin worms are crawling about the rectum. To calculate the extent of its sale in actual figures, would involve the labor of a life-time. Will you be pestered longer from the aggravating Piles?



"Bob Hood." 2079 -

1<sup>st</sup> at Ills. State Fair '79 & '80 -  
Head of Sweep-Herd " '80 & '81 -

## LIVE STOCK REGISTER.

Believing the eye to be a most important medium of conveying information to the mind, one through which it can instantaneously receive and more thoroughly understand, what it would require words to convey. We have always considered a good engraving to be the best means of presenting a correct idea of an individual animal. We consider it, however an indispensable pre-requisite that it should be executed from life, by a skillful and conscientious artist, that the good points be not exaggerated, and the bad ones not concealed. It is only when it is a true likeness, that it merits any confidence. Of course, a picture should be taken when the animal is in the best of flesh and condition, when carefully groomed and tended, in other words when looking its best. No person would think of having his own likeness taken without having on his clothes and clean linen, nor would a choice animal be done justice to, by a drawing or photograph taken when poor in flesh or in bad condition. Impressed with these views, and having seen the animal, we requested the use of the accompanying cut from Mr. Alex. M. Fulford, of Bel Air, Md., believing we could thereby

present to our readers a description of a model Berkshire, more acceptable and instructive to an observant breeder of stock than a whole page of descriptive word painting.

For the Maryland Farmer:

### Horse Stables.

There is much room for improvement in this matter of horse stables, and it is in the interest of valuable and hard working and faithful animals that it should be done. As a rule, more care is taken with nearly all other kind of domestic live stocks than with horses, though why this should be we can only conjecture. Low, damp and illy ventilated stables can be found in plenty, while many of them are so dark and gloomy, it is no wonder so many horses, kept in such stables go prematurely blind, by being kept in the darkness, while in the stables, and then suddenly brought out into the full glare of broad daylight to be harnessed up for a days work. Stable must be well ventilated, to take off the foul air and gases which are sure to be generated from the excrement and urine of the animals, while having manure pits immediately underneath the stalls, the stalls having slat floors, is productive of many equine disorders, such as rheumatism, colds, catarrh &c., all of which are more or less fatal or injurious.

The floor of the stalls should be solid, but we have serious objection to a board



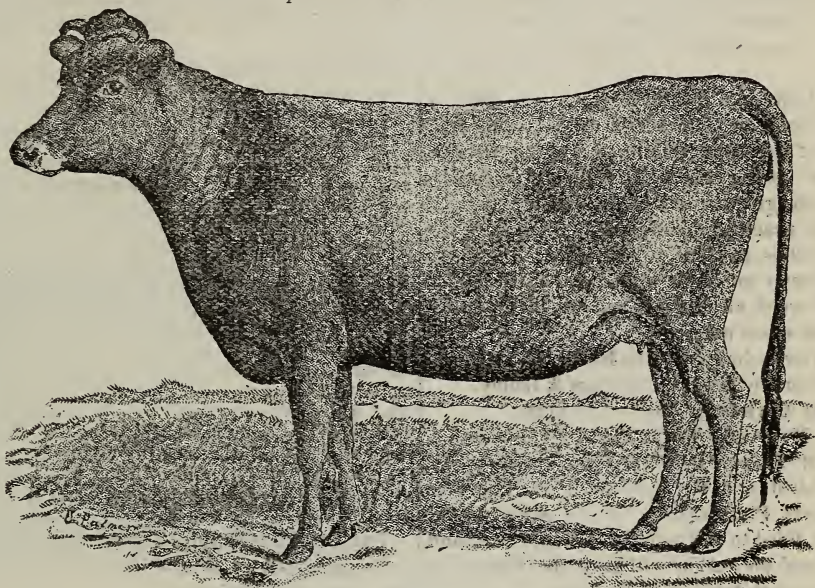
or blank floor, for they are very hard on the horses feet, while others use brick, stone or cement, all of which answer the purpose very well, as far as solidity and comparative indestructibility is concerned, but frequently breaks the horses feet up badly or bruises considerably, unless straw or other litter is kept constantly in the stalls to prevent this; and in doing so is apt to collect much of the liquid matter in the stall which would otherwise be carried off by drainage.

The very best floor for a horse stable, and one which keeps the feet in a good, healthy condition, other things being equal, is one made of fine gravel and clay, well pounded in till it becomes compact. At

LA BELLE, of West Grove, 4th, 13,414 owned by Messrs. Watts & Seth, is a Jersey heifer of great beauty and excellence. She has calved—a heifer calf, since the plate of our illustration was made, and although not two years old she is both a large and rich milker.

Her dam, owned by S. C. Kent, of West Grove, Pa., is said to be one of the greatest butter makers in the country, and her owner writes under date February 25.

"She is now milking 16 quarts of milk, which yields 40 per cent. of cream."



LA BELLE, OF WEST GROVE, 4TH, 13,414,  
AT 20 MONTHS.

first, it is best to keep some litter or coarse straw constantly in the stall, till the animal completes the work of compacting the clay. On this the animals will keep cool, will not be apt to either bruise or pound their feet severely during "fly time," and will not be apt to contract disease or fever in the feet. When the clay becomes pounded out of shape, more can soon be gotten, and it does not cost much more than an effort, in many places. E. Jr.

Cold rain water and soda will remove machine grease from washable fabric.—

*Exchange.*

La Belle, 4th, is only one of the choice herd of Messrs. Watts & Seth—which is gaining in celebrity for its excellence, embracing, as it does, only animals of the choicest breeds and individual worth. The herd is kept at the home of Mr. Seth, on the line of the Balto. & Powhatan horse cars, about three miles from the city.

A SMOOTH COMPLEXION.—Can be had by every lady who will use Parker's Ginger Tonic. Regulating the internal organs and purifying the blood it quickly removes pimples and gives a healthy bloom to the cheek. Read about it in other column.

## Publications Received.

"The Chemistry of the Farm," is the title of a book of 120 pages, by E. Warrington, F. C. S., published lately by the Orange Judd Co., N. Y. The author holds an important position on Dr. Lawes' estate of Rothamsted, England, and which has been rendered famous by the scientific investigations of Lawes and Gilbert, in agricultural problems, who have by their learning and painstaking attracted the attention of the whole scientific world. This new work is written for the comprehension of plain farmers, and is a mass of valuable information for the farmer who desires to improve his mind with the truths and usefulness of chemistry in the every day affairs of his farm. It should be found, therefore, in the library of every one who believes in agricultural science.

"The Culture of the Sweet Potato."—This is a small book by James Fitz. of Va., a practical grower of this bulb, published by the Orange Judd Co. It is a gem in its way, and indispensable to the grower of this delightful vegetable as it is a practical hand-book, telling how to raise the slips, to plant, to cultivate, to gather, to store away safely for winter, and how to cook, &c., in a word, all that one can want to know about the sweet potato.

These two admirable little books are for sale in Baltimore by Messrs. Cushings & Bailey.

BY AUTHOR OF "HELEN'S BABIES."

"Mrs. Mayburn's Twins," by John Habberton, author of "Helen's Babies," is in press and will be published in a few days by T. B. Peterson & Brothers, Philadelphia. It is a charming bit of work, filled to the brim with fun, frolic, and reality, and the author will have the thanks of every one that reads it, for there is in it a sweet under-current of pathos that lends a special charm to the whole story, from first to last. All who like to read about children, their mothers and the home circle, should get and read this truly absorbing and fascinating story. It is a gem of the first water in a setting that adds vastly to its attractiveness. Mothers and fathers especially will find it a treat of the rarest kind, for it is a worthy companion to the renowned "Helen's Babies," by the same author.

The proprietors of Kendall's Spavin Cure have hundreds of letters on file speaking in the highest terms of the benefits derived from its use. When you find one case where it has failed to give relief, there are hundreds where it has proved a success. Read advertisement.

## Catalogues Received.

From Messrs. Smiths & Powell, Lakeside Farm, Syracuse, N. Y., three elegant and beautifully illustrated catalogues of Holstein cattle, Clydesdale horses, and Hamiltonians. They are very extensive breeders of these choice breeds of domestic animals.

J. S. Collins, Moorestown, N. J., Small Fruit Plants, Trees, &c.

William Parry, Parry, P. O., N. J., catalogue of his famous, old nurseries, so favorably known to the country.

John Saul, Washington, D. C., his six several catalogues of plants, trees, rare flowers and novelties in horticulture, well illustrated, and a large, superb colored picture of three magnificent roses. Mr. Saul, like old wine, needs no bush to guide the public to his large nursery and extensive conservatories.

Rumson Nurseries, Red Bank, N. J., a complete assortment of ornamental trees, shrubs and vines, &c.

The catalogue of Messrs. Burrell & Whitman, Little Falls, N. Y. This is an unusually large and handsomely printed and illustrated catalogue of all the implements, tools, appliances, &c., required for large or small dairies, creameries, and cheese-making establishments. In this line, the establishment of Messrs. Burrell & Whitman is the most complete and extensive in this country, and therefore has a national reputation. Every dairyman should possess one of these catalogues. Accompanying the catalogue we received an elaborate and instructive essay prepared by them upon "The future of the dairy interests of America," which we have read with so much pleasure that we shall soon give our readers some extracts from it.

## Journalistic.

THE STAR is the title of a new penny afternoon daily paper started in Baltimore. It is bright and newsy, independent and likely to be popular. Though not yet of the first magnitude it bids fair to shed its light for a long cycle.

SOUTHERN PLANTER is now the title of the old Southern Planter and Farmer of Richmond. Its late accomplished editor R. S. Saunders having retired on the first of March, and gracefully introduced his able successor Col. Aubrey H. Jones. While we regret the departure of Mr. S., we welcome Col. J. into the agricultural arena of our brotherhood.

THE HARFORD COUNTY AGRICULTURAL SOCIETY—will hold a spring meeting at Bel-Air, on the 24th, 25th and 26th of May, for exhibition of farm implements and horses, (no premiums) also for trotting races and public sale of machinery and stock.



## LADIES' DEPARTMENT.

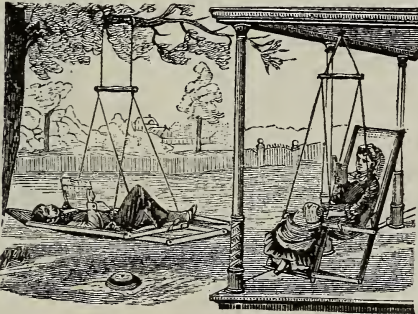
### Chats with the Ladies for April.

BY PATUXENT PLANTER.

"From the cold embrace of Winter,  
Like a laughing, wanton maiden,  
Spring on noiseless feet advances  
Fresh with rural beauties laden.  
At her coming icy fetters  
Break, and murmuring waters flow;  
Nature from her slumber waking  
Breathes in music sweet and low."

APRIL, coquettish April, appears once more to gladden our hearts with the realization of rural beauty of Spring and pleasant expectation of the full ripeness of summer flowers and fruits and healthful vegetables.

Now is the time when country lassies and mothers should be busy with their poultry, bees, pigeons, dairy and flower garden. In the latter, shrubbery and bulbs are to be planted, seeds to be sown and the borders and walks attended to and put in nice order for the year. No further neglect is to be permitted if a beautiful enjoyment is to be hoped for this summer.



This is good time to propagate by cuttings placed in pots in the windows of a warm room, where the temperature is kept up to a fair degree of warmth during the night. Most roses and other plants start quickly and root well with a little trouble. Have a flower pot half filled with coarse sand, and then fill up with fine sand, well rotted manure and wood's mould, equal parts, stick the cuttings around next to the side of the pot and water with tepid water, cover with a tumbler, glass jar or bell glass, to prevent too rapid evaporation of moisture.

Among home comforts in summer are swings, hammocks, &c. The latter are delightful for the invalid or indolent or tired nature seeking repose. But it often happens as they are usually permanent fixtures, that they are in the way if swung in a veranda, or if out doors, a part of the

day they are in the sunshine and therefore can not be used. I give the cut of a new and cheap invention of the Goodel Company, Antum, N. H., called the "White Mountain Hammock Chair."

This hammock Chair is simple and strong; is adapted to the house, lawn, porch or camp, and affords a great amount of comfort and rest. It far exceeds the ordinary hammock in convenience and can quickly be put up so as to be always in the shade. It assumes and can be used in any position, from sitting up to lying down, without any exertion of the the occupant, and supports and rests the body in whatever position it is placed, while the price is so low as to be within the reach of every one.

For the Maryland Farmer.

### Hints about House-keeping.

BY COUSIN MEHITABEL.

[Continued from page 97.]

#### POULTRY YAKD.

I will not venture to enter upon this subject. It presents too many attractions. There are so many good kinds of chickens it is hard to say which is best. To have hens lay well, allow them plenty of room and do not feed too highly. Ducks, Guineas, Turkeys and Pigeons, are all profitable; all make a nice variety for the table, and are not difficult to raise where there is plenty of space and pure water.

#### FRUIT AND KITCHEN GARDENS.

These should be near the house so as to be convenient for the supervision of the mistress, and should be kept well tilled and in thrifty condition. It should be the business of the master to make these departments objects of special care.

The various *small fruits* in good variety, should occupy a lot to themselves. They are much more convenient to cultivate and to gather than when planted among other things. When the various nurseries offer such choice selections, and so cheaply too, it would seem real negligence to be without a good supply of fruit. I would suggest that plants, vines and trees would be better purchased from nurseries near us, than from those so much further north. The nearer the plants are suited to our climate in condition and habit of growth, the better chance they have to live and thrive.

The *kitchen garden* should be kept supplied with a succession of growing vegetables, and when there are so many places from which to

obtain good, reliable seeds and plants, it would seem careless to be without plenty; and it would also be invidious to recommend any one dealer as being better than another. A little care taken in the autumn, will provide a nice supply of "greens," corn salad, spinach, lettuce, &c., to begin on with the first glimpse of spring.

**PEACH CIDER.**—This new article of temperance drink we have tested through the liberality of the inventor, Mr. Coblenz, and found it a very pleasant beverage, superior to apple cider. By his patented process it is claimed that every owner of peaches can realize \$3.00 per bushel for them, at his home, and therefore it will prove a source of great profit to peach growers distant from market, and especially when peaches are abundant and bring low prices. We refer our readers to the advertisement in this number of the *FARMER*. Samples can be had at No. 70 S. Charles St., Baltimore, by any one desirous to taste this new and delightful drink.

**THE SUN MUTUAL AID SOCIETY OF BALTIMORE CITY**, Maryland, whose office is located at No. 31 N. Holiday street, (opposite the City Hall) has sent us its *Report for Quarter* ending March 1st, 1882, by which it gives evidence of being in a flourishing condition and growing carefully and soundly.

Though but two years since it commenced working under its charter, and confining its risks almost entirely to Maryland and the Virginias, it has in that short time issued 698 certificates of membership, amounting to \$1,986,725.

A remarkable fact stated in the Report is, that it has made but *three* death assessments (which have been duly settled,) during those two years.

From our acquaintance with the officers of the Society we have great confidence in its success and commend it to the public.

We are strongly disposed to regard that person as the best physician who does most to alleviate human suffering. Judged from this standard, Mrs. Lydia E. Pinkham, 233 Western Ave., Lynn, Mass., is entitled to the first rank, for her Vegetable Compound is daily working wonderful cures in female diseases. Send for circular to above address.

### Poultry Questions.

March 20th, 1882.

*Messrs. Editors.*—Will you be so kind as to answer through your contributor, Mr. T. B. Dorsey, the following questions relating to poultry.

In carrying out the suggestion of yarding fowls, how much food is necessary for each ten hens and cock?

What is meant by a "carbolic nest egg" and where can they be obtained?

By giving these questions your kind attention will greatly oblige Mrs. BROOME.

When you see a promising colt with a splint, curb or spavin forming, thus spoiling its sale, go at once and procure a bottle of Kendall's Spavin Cure. One dollar invested in this great remedy will save you hundreds of dollars. It has no equal as a liniment for man or beast.

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